

Wasting The Wabash

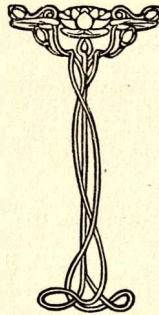
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Wasting The Wabash

by

Charles Timothy Jewett

of the Terre Haute Daily Star

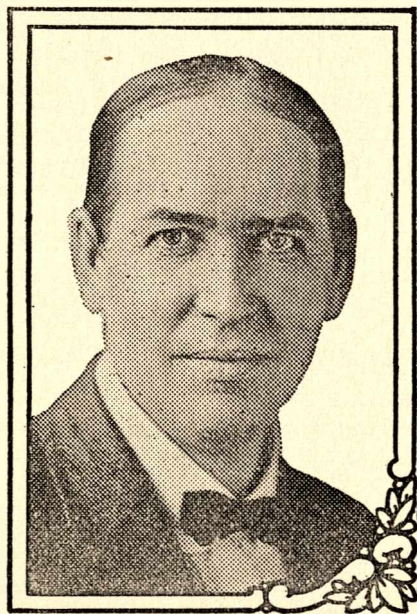


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by
CHARLES TIMOTHY JEWETT



Charles Timothy Jewett

WASTING THE WABASH

MOST of us have a more or less definite idea of the Wabash River. We are pretty well satisfied that it is a considerable stream which comes from somewhere in Ohio and traverses the productive and intellectual section of Indiana. Its length and physical condition do not concern us. We merely accept the fact that it exists for convenience in determining certain boundaries, providing suitable sites for ambitious cities and villages, presenting puzzling problems for solemn state and county officials, who must decide about bridges and levees.

Further we might be reminded that it is an excellent excuse for the chronic angler and provides a livelihood for mussel diggers and frequently gets public attention through periodic floods, ice gorges and low stages.

It is a stream of extremes. Sometimes a river frequenter finds a pearl for which he refuses two or three thousand dollars and later swaps the bauble for some delicate trinket or leaves it with friend publican to establish further credit for bait.

Now that we are really interested and persuaded of our lack of information we will refer to our Britannica. Search through one big volume will reveal this:—

WABASH (river) see Indiana, vol—; page—.

Reference to another volume will give the illuminating information that Indiana is a well watered state as a result of being in contact with Lake Michigan and furnishing scenery for the banks of numerous rivers. We are advised that the largest of these is the Wabash, which flows across the state from North-east to South-west. Some of the other rivers are named. Anyway the Wabash is given special mention.

Of course it is a matter of little note that these Britannica devote large attention to hundreds of insignificant streams just because some pagan bandit waded their waters.

But such discussion and investigation is wasting time. We are to consider Wasting the Wabash. This may be viewed from many angles or bends. Historically the river has a permanent place. Commercially and industrially it is a big asset. There is along its banks and in its tremendous flow or rippling rapids inspiration for the artist or poet.

History tells of discovery and exploration of many rivers—the Mississippi, the Hudson, the River of Doubt. But the Wabash! Well, apparently it was here before it was discovered. The Indian just accepted it as a fact, as we must. The French traders worried about leaving information of the discovery of the Kankakee, the LaSalle and other small streams. They boated up and down the Wabash before the Kaskaskia was known but it was not necessary to advise the Red Men of the Wabash.

Even Indian traditions apparently gave only incidental attention to the Wabash. The Red Men knew it as a big river and their ancestors had watched the seasons to avoid overflows which also were considered necessary and to be expected each spring. None could recall when time and distance were not measured from the stream we now know as the Wabash.

For generations the bluffs along the stream had been agreed as the proper places for their council fires. The mighty timber was their best hunting ground and the fertile prairies that stretched back from the bluffs grew their maize. It was not necessary to mark with mounds of earth the location of the stream that watered the roots of the stately sycamore sentinels.*

The Wabash actually played a big part in the pacification of the Red Men of the Northwest Territory. General Harrison found the river convenient in boating supplies while moving his army from Vincennes to Tippecanoe. The trip that then occupied more than three months now is a good day's motor drive. So what is the use of boats for hauling equipment or supplies.†

Our most highly prized heirlooms were brought to Terre Haute in its early days on flat boats by way of the Wabash. It is a certificate of genuineness to show antiques that survived the strong armed roustabouts of Wabash river craft when the stream was the chief channel of commerce of early Indiana. But the Wabash no longer can compete with trolley lines and trans-continental railways.‡

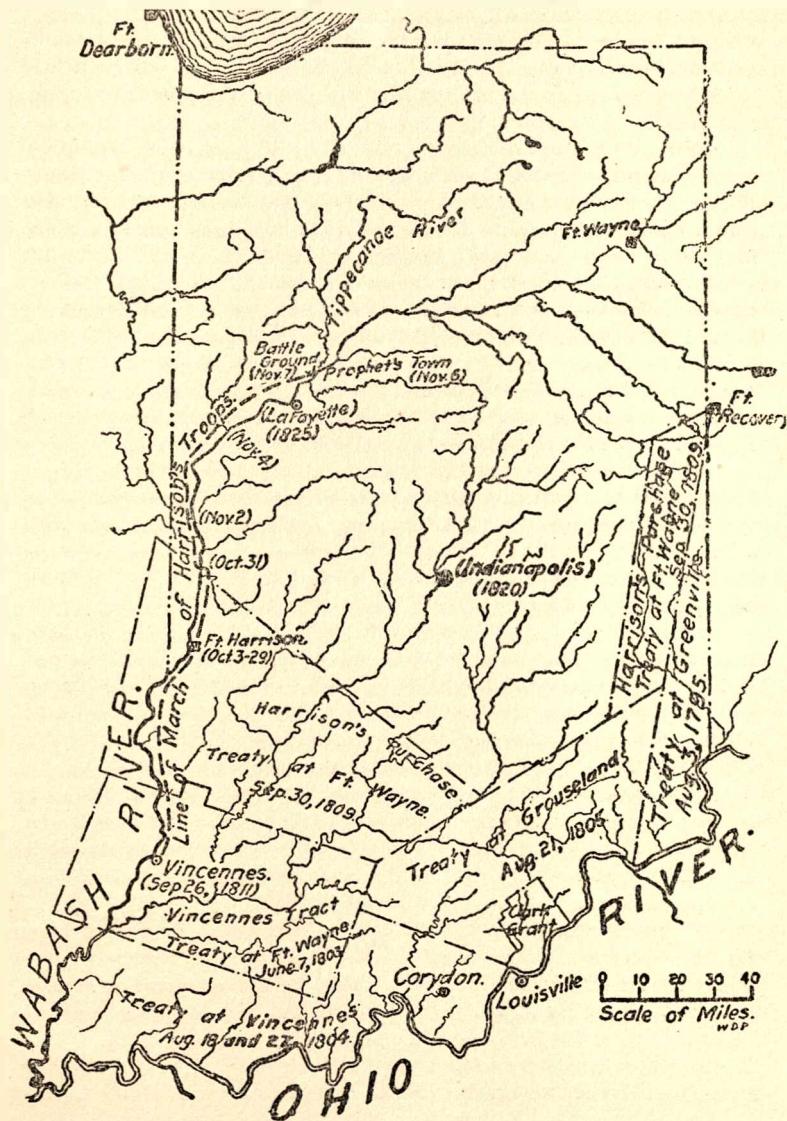
Yet there are some who would insist that the Wabash still is a navigable stream and that the federal government should clear the channel and do something to restore the commercial prestige of

*The earliest French name given the river was Ouabache, which was the way the traders caught the pronunciation of the Indians. The French later called it the Blanch river, and the English called it White river. Finally early American settlers restored the Indian name and gave the English spelling of Wabash.

†General Harrison and his army left Vincennes Sept. 26, 1811. Began erection of Fort Harrison Oct. 3, and completed it Oct. 28. Next day the army proceeded north, using the river to transport supplies. Battle of Tippecanoe Nov. 7, 1811.

‡First recorded boating on the Wabash, aside from Indian birch canoes, was in 1757 when a French and Indian army recruited in Illinois, boated up the Ohio and Wabash on the way to Quebec. The first published mention of commercial navigation was the arrival in Terre Haute in 1822, of the Florence, a small steamer. The Plow Boy came in 1823, and there was considerable river traffic until railroads were built.

INDIANA -- 1811



Map showing the extent of the Wabash river—that it rises in Ohio, North-east of old Fort Recovery. Indian treaties are also shown.

the river. Wabash river improvement booster meetings were popular between Terre Haute and the mouth of the river not many years ago. There were lengthy petitions to the Congress. Mass meetings adopted resolutions and vote-seeking representatives in Congress applauded the aroused public spirit and promised to give the matter early and earnest consideration. Everybody was enthusiastic.

There was a general feeling that the river North of Terre Haute was of little value except as scenery. This naturally limited the enthusiasm to the South Wabash valley. The Wabash river still flows conveniently through Terre Haute. It is navigable, just as it was in the early days of the state. Apparently no one cares. The government has a quicker route for parcels post. Packers, manufacturers and merchants require speed in delivering their wares.

Of course the effort to induce the government to unload a few millions of dollars in the Wabash valley was not altogether fruitless. It served through the instrumentality of public meetings and general discussion to promote civic pride in a lot of communities. During the time some of the river enthusiasts were trying to convince themselves that all the valley needed was a few millions of federal funds for dredging and deepening the channel of the Wabash. Perhaps some of the most rabid really expected that federal aid would make their dreams a reality. So we kidded ourselves into a state of excited happiness. We even hippodromed a boat launching. A large river survey craft was built in Terre Haute. Boat building yards noted a tremendous interest and promised the revival of a big industry. Scores of barefooted, dirty faced boys and an occasional business man watched the progress in constructing the flat, raft-like hull. The business men by their sacrifice of time to visit the scene of river bank trash piles testified as to their interest in the enterprise. The boys pestered the workmen with innumerable questions and proudly packed away blocks, spikes and rope ends as souvenirs.

Terre Haute made a regular circus day celebration of the launching. There was a big civic parade with distinguished visitors and leading business men in carriages, afoot and otherwise trailing to the jumping off place of the east bluff. When time for the big event arrived most of the tall weeds of the river front had been pretty well tramped down.

It was a regular boat launching. There was a decorated stand for the speakers where some good friends of mine referred to the event as the day of achievement. They spoke eloquent addresses. I know they will pardon me now if this recounting does not appear to be as serious as the hopes and promises of the day suggested.

But there was more to that regular launching. There was an attractive girl ready to crash a bottle of Champagne (Velvet) against the end of the craft. Along about this stage it is necessary to bring

on the breathless anxiety and nervous suspense of the assemblage. It was all there. The young woman did her part but the bottle bounded along the soft earth. Unseen except by a few of those honored with places inside the ropes, the hero saved the day. He dashed down the ways, seized the bottle which was dangling at the end of a ribbon attached to the boat and slammed the glass container against the planks.

Rivermen employed in the construction of the boat confided to me that the usual plan was to build the raft, they called it, close to the bank and then dump it in the water. Out of deference to the river improvement enthusiasts of the Wabash this boat was built so there could be a regular launching. When the time arrived to push the craft into the Wabash, some huskies were ready to knock away the blocks and chop a heavy rope. My recollection is that the fellow who operated on the rope had an extremely dull axe. This probably was one of the incidents that flustered the sponsor so she lost control of the beverage container.

I remember it all was very serious. The pent-up enthusiasm finally broke. The mass of lumber crunched down the incline and displaced several tons of mud as it entered the water, then bobbed about and drifted out into the stream. Later it was rescued and made fast to another craft used by the surveying party.

To the crowd the day was a great event that was to mean the restoration of the Wabash river as a great highway of traffic. I am sure some in the throng really believed that. To the rivermen and members of the government party it must also have been a happy incident.

I recall hearing one of the members of the dredging crew say: "This is a swell party. Now as soon as those poor nuts get through with their glad stuff we will hitch up the old scow and beat it down the river. This kind of palaver gives me a ache."

I think many of us will recall the incidents. It is all very vividly impressed on my memory. All except the name of the boat. That rather escaped me in the confusion, but of course the boat could not have been christened without a name. I do recall hearing one of the surveyors or dredgers refer to the craft as "Number Three" but surely that was not the official name.*

The boat that was to be instrumental in restoring navigation of the Wabash was towed down the river in due time and never returned. The river we still have with us. The boat has passed—perhaps submarined by a hidden snag. More likely abandoned when its usefulness was gone and probably it has been salvaged by some river front squatter for a house boat.

*River survey barge was launched at the foot of Crawford street June 20, 1911. Spencer F. Ball, George M. Crane and others spoke.

The Wabash river is just as navigable now as it was one hundred years ago. If river transportation was practical and desired it would be possible for Terre Haute manufacturers to boat their product down the river. The fact that they do not is a matter of saving time and convenience. The plea of economy does not count. While the manufacturer or producer was carting his merchandise to the river and loading it on boats it could be put in freight cars and hauled to New York City. Before the crew of the river craft hailed the ferry-man at Merton the freight train would be delivered to the Pacific coast.

We certainly are wasting the Wabash so far as neglecting the facilities for navigation are concerned. But it is just a matter of choice and of responding to the demands of modern day business.

As a matter of fact the resources of the Wabash river must be exploited if they are not wasted. Actual wasting of the Wabash in Terre Haute might be limited to forgetting to shut off the garden hose. But the meter would remind us of the error.

Even if we admit there is little practical reason or hope for restoring commercial navigation there is opportunity and invitation to use the river more extensively for pleasure craft. The day of the power boat is here and no stream of the country is more tempting to motor boat parties. Pleasure boating and associated sports and recreations invite use of the river that is neglected.

But the all-year motor car weans many away from the river, so even power boats are neglected. It is not a matter for discussion as to why or wherefore. It is an actual condition. The invitation to pleasure and recreation is standing, but something else appears to be more appealing.

The pleasure, healthy outing and comfort in summer offered by camps along the Wabash are being neglected. The productive forces of the river are not being utilized. Except as a source of water supply for cities the current flows on without an effort to harness the power. Frequently some promoter seeks to arouse interest of capital in providing funds to establish a great power station. It all seems practical but probably will not be achieved until other sources of production and power are exhausted, or at least limited.

The matter of exploiting the Wabash river for summer recreation has been neglected as a matter of course. Perhaps we prefer to get farther from home on our vacations. That may be well for those who can afford to hie to the lakes and mountains. The Wabash river opens a field for the people who remain at home to get even greater summer pleasure and value than those who seek distant watering places.

There are many reasons why the Wabash river in the immediate vicinity of Terre Haute is not lined with summer cottages and bathing beaches. The first reason is the commercial development. This has taken many desirable sites and the people are prone to avoid effort in

providing their own recreation places. They drift to established camps. The big trees and refreshing river front almost at their doors are wasted because some one has neglected to hang up a sign calling attention to "Sycamore Tree" of "Sandy Bar."

Unfortunately for Terre Haute some river camp places close to the city have been exploited by unsavory resorts. It might be well for the people to take a lesson from these undesirable establishments. The promoters have recognized the appeal of the river that the good people of the city have neglected.

But all the desirable camp sites have not been used for commercial establishments or unwholesome resorts. Within an hour by motor boat from the Wabash avenue bridge there are scores of beauty spots that need little more than a boat landing and tent to provide healthful and comfortable summer outing places. These sites invite more permanent improvement and with the construction of substantial cottages or bungalows and even club houses the possibilities for outing pleasure are enhanced.

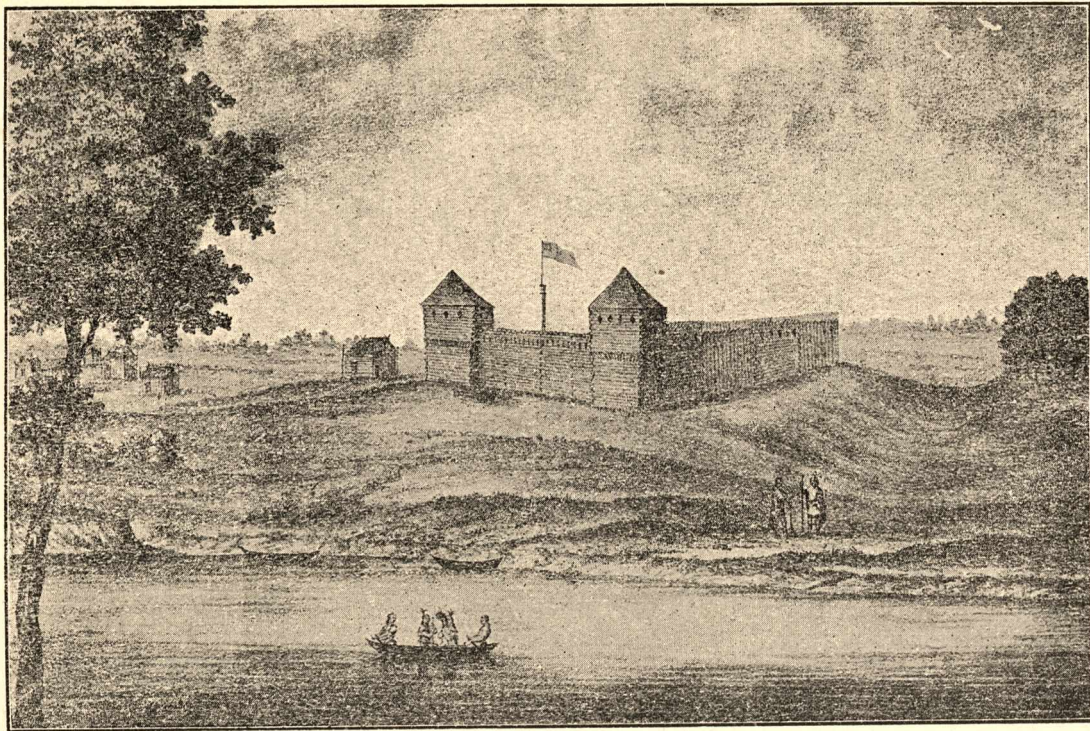
Terre Haute appeared to be awakening last summer to its neglect of the Wabash. Large boating parties became popular. Picnic parties sought added pleasure of a trip on the river to one of the beauty spots. More than ever before did the water appeal as an important feature of large outings. And the people learned that the Wabash river affords more attractive bathing beaches than half the lakes of Northern states. Then the river offers to the youth the atmosphere of "The Old Swimming Hole."

Organizations that look to summer outings caught the spirit last summer and the Wabash apparently returned to its own. Grounds of private clubs were opened for many large river parties. Just for proof of the appeal of the river it might be well to note that many of the outings also provided for conveyance by motor car to those who were unable to arrange their time to take the boat. The most of the people reported for the river trip. And they all were happy to escape dusty country roads.

Of course the convenience and availability of the motor car appeal to many but there is something about the water that is restful far beyond anything offered on the land highways.

The further development of the large club cottages, houses and pleasure grounds along the Wabash will in time attract individual and family camps. Then we will realize how we have wasted the Wabash in the pleasure it offers.

With little prospect of the development of freight navigation and the harnessing of the power in the current a dream of the distant future, it appears that the best opportunity is to utilize the river for our recreation. The Chamber of Commerce, Civic League and other bodies that look to the welfare of Terre Haute could do nothing better



FORT HARRISON—Built by General William Harrison in October, 1811, and defended by General Zachary Taylor September 3-4, 1812, against several hundred Indians who had agreed to destroy the Fort and its occupants. Aside from the homes of a few squatters, Fort Harrison was the first institution in Vigo County.

than assist residents to locate agreeable summer camp sites. Fraternal orders should be encouraged to provide outing grounds. Social organizations could well transfer summer activities and gatherings to the shade of the big trees where there is a refreshing breeze from the broad river. In many cases the suggestion will be welcomed as a means of relief from city noise and summer discomfort. Anyway, it is worth undertaking, because we owe the river a lot of boosting.

Terre Haute has been backward in taking its river recreation. The reason may be explained in the anxiety of the citizens to get away from noise and business and to escape formality. We get the back-to-nature hunch along about the time cherries are ripe, but we have not taken the trouble to look into the possibilities of the Wabash. Within ten miles of the city one may lose himself, apparently, from all the serious problems of life except living—and that living may be to the tune of nature's most inspiring music.

There may be a suggestion from other cities along the Wabash to people of Terre Haute. During the last few years the Wabash river front from Lafayette more than ten miles north to the junction of the Tippecanoe and the Wabash rivers has been developed into a great summer camp.

The river front in the vicinity of Terre Haute provides better water, more big trees, more attractive views, better bathing places, and the same wholesome, refreshing atmosphere. And of course there are fish for the taking. The extensive improvements of the site of Fort Harrison and the permanent establishment of the Apple Club may turn the tide to the sadly neglected Wabash.

The City of Terre Haute owes it to the youngsters to provide a protected bathing beach. Boys, and girls too, insist on a chance to swim. This desire has brought an occasional river tragedy that might have been averted through the provision of a protected or municipal bathing beach. Of course bathing beaches at fashionable or exploded summer resorts are not without their tragedies. But there are no sharks in the Wabash, and the danger of drowning would be reduced to a minimum.

If such provision is not made by the city or through some of the public spirited organizations, it will be but a few years until the bathing facilities of the Wabash are exploited by private enterprise. But even that would be better than the present status of neglecting the opportunities presented by the best little river at our door.

The revival of attention to the Wabash as a pleasure resort already has tempted scores to the Second sand bar. Perhaps some day this may be connected with the city by an improved drive and provided attractive conveniences. It might even become known as Taylor Beach, in honor of the former President of the United States, who, in his early military career, commanded the defenders of Fort

Harrison. Then we might perpetuate other honored names of early settlers and heroes of the pioneer days, in establishing camps and recreation grounds. Such development along the river would mean in time, a river front drive that also could be given an appropriate name.*

With the establishment of clean and wholesome camps, family cottages, tent grounds for Boy Scouts, Campfire Girls and other organizations the unsavory resorts will pass. The troublesome "Blind Tigers" cannot exist if the attractive places along the river are used for family and society recreation. The problem that causes worry to authorities will be solved in the natural social rehabilitation of the river front.

We will continue to waste a lot of the Wabash. There is so much of it and it is so close and common that it is not appreciated. But it is not to be presumed that the river that figured so prominently in making possible the civilization of the Northwest Territory will be altogether neglected.

The Wabash will remain. The stage will continue to be influenced by varying rainfalls of the passing seasons. New levees will be constructed to insure development of fertile valleys. More bridges will bring together the residents of cities and rural communities. Fishermen will row their boats to fruitful bends. Cities will be watered and great manufacturing plants will line the banks. Sometime when we are far from home we may feel as Paul Dresser did even if we are not endowed to pay such tribute as did the song writer.

The river is the biggest asset Terre Haute has because it embodies the tradition, history, utility and pleasure of the people of the valley. And we are neglecting it even though we frequently are reminded that "The moonlight's fair tonight along the Wabash."

*Battle of Fort Harrison Sept. 3-4, 1812.



HENRY FAIRBANKS MEMORIAL PARK

TWO weeks following the reading of Mr. Jewett's paper before the Terre Haute Literary Club the first riverside park became a reality through the gift to the city of Messrs Crawford and Edward P. Fairbanks. And it is to bear the name of one Terre Haute is proud to honor.

The Henry Fairbanks Memorial Park comprises a tract of about twenty-four acres extending from First street to the Wabash river between Oak street and College avenue. The park was given as a memorial to the father of the donors, who was mayor of Terre Haute in 1878, and who died while in office.

The gift was announced in a communication from Messrs Crawford and Edward P. Fairbanks to the City Council December 4, 1916. The tract was officially accepted for the city by the Board of Park Commissioners December 6, 1916. This board immediately took steps to provide for the permanent and appropriate improvement of the park.

The Henry Fairbanks Memorial Park includes the site of the River Survey boat launching of June 29, 1911.

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THE HALL OF RECORDS
GEORGE A. SCOTT
JAN 18 1880
JAN 18 1880

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photo p20
not in copy

Crossing of the Mabash River
at and near Terre Haute, Indiana

By

George A. Scott

GEO. A. SCOTT
LAWYER
663½ WABASH AVE.
TERRE HAUTE, INDIANA

CROSSINGS OF THE WABASH RIVER
AT AND NEAR TERRE HAUTE, INDIANA

BY

GEO. A. SCOTT

*Read before the Vigo County Historical Society
July 11, 1930*

CROSSINGS OF THE WABASH RIVER AT AND NEAR TERRE HAUTE, INDIANA.

When white men first came into this section of the country there were a few Indian lodges located on the east side of the Wabash river on the high ground just south of the present water works pumping station, and this place was finally named by the early French pioneers and scouts "Terre Haute" (land high), this place being the highest point of land on the Wabash river, for many miles up and down the river. Up the river from this point at the upper end of the first sandbar is the beginning of a shallow part of the bed of the river and fifty years ago and previous this place was known as Indian Riffle, and it was related, at that time that this place was one of the places on the Wabash river used by the Indians crossing it. At this place the water is shallow from the western bank to within thirty or forty feet of the eastern bank and at low water it is possible for a person to wade almost across the river. The Wabash is not a deep river at low water and during dry times there are many places within a few miles of Terre Haute where it is possible for a man to wade across the river without swimming more than thirty feet.

The Indian Riffle crossing does not go in a straight line, but makes a big bend down stream and the shallow part is just above the place where the water pours over into the deep part of the river known as the "Forty Foot Hole", but it is about fifteen feet deep in the deepest place.

FERRIES

After the county of Vigo was organized and the Town of Terre Haute laid out, the crossing of the Wabash river was done by ferries, which were licensed by the County Commissioners.

There is a claim or tradition that a ferry was operated at Terre Haute under the authority of the County Commissioners of Sullivan County before Vigo County was organized, but the first ferry operated under the authority of the County Commissioners of Vigo County was operated by Solomon Lusk and John Durkee. This ferry landed on the east side at a place northwest of Grasselli and the west side at the town of Tecumseh. There was a public highway on the east side across the bottoms which connected with what is now Thirteenth Street.

Commrs
Record
1. p.18

"Aug. 13, 1818

On the petition of Solomon Lusk and John Durkee for the establishment of a ferry across the Wabash River from the west to the east, Fraction Number 21 in Township Number Thirteen North, and Range Number Nine west, the Board being fully satisfied that the notice required by law had been given and that the land on the one side is owned by the said applicants, it is ordered that the said ferry be, and it is hereby established; that the proprietors thereby procure and keep for the succeeding year, one good flat-bottomed boat sufficient for transporting of a loaded wagon and four horses; also one skiff or canoe, together with a number of hands for managing the same, and that they will be allowed the following rates for ferriage, to-wit: From the first day of May to the first day of December, for a man and horse, 25¢, and from the first day of December to the first day of May, 37½¢; for a wagon and horse, 37½¢ and for every additional horse, 12½¢; ox

3

teams in the same proportion; for every head of neat cattle, 64¢;
for every head of hogs and sheep, 34¢."

"November 10, 1818.

On the petition of Toussaint Dubois for the establishment
of a ferry across the Wabash river from lot ____ in the Town of
Terre Haute, the Board being fully advised of the requisitions of
the laws relating to the establishing of ferries having been

Com.

Record complied with by the said applicant, it is ordered that the said
l.p.41

ferry be, and it is hereby established, that the proprietor
thereof procure and keep constantly in good repair one flat-
bottomed boat sufficient for the transportation of a loaded wagon
and four horses and one good skiff for the transportation of foot
passengers, and that they be allowed the following rates for
ferriage during the pleasure of the said Board, viz: For a Wagon
and one horse, 25¢; for a wagon and two horses, 50¢, and for a
wagon and four horses, \$1.00; ox teams in proportion; for a man
and horse from the first day of April to the first day of
December, 12½¢, and from the first day of December to the first
day of April, 25¢; for neat cattle over one year old, 64¢; for
hogs and sheep, 3¢; for ^{for foot passengers} _____ 64¢ each, and in the months of
December, January, February and March, 12½¢."

November 11, 1818.

On petition of Adam Weaver for the establishment of a ferry
across the Wabash river from lot ____ in the Town of Terre Haute,

Com.

Record the Board being fully advised of the requisitions of the law
l.p.42

having been complied with by the said applicant relating to the

4.

establishment of ferries, it is ordered that the said ferry be
and it is hereby established; that the proprietor thereof procure
and keep a good and sufficient flat-bottomed boat for the trans-
portation of a loaded wagon with four horses and one good skiff
sufficient for the transportation of foot passengers, and that
he be allowed the following rates of ferriage during the pleasure
Com. of the said Board, to-wit: For a wagon and one horse, 25¢; for
Record a wagon and two horses, 50¢, for wagon and four horses, \$1.00,
1.p.42 and ox teams in proportion. For man and horse from the first day
of December to the first day of April, 25¢, and from the first
day of April to the first day of December, 12½¢; for a single
person, 6¼¢ from the first day of April to the first day of
December, and from the first day of December to the first day of
April, 12½¢; for neat cattle over one year old, 6¼¢ each; for hogs
and sheep, 3¢ per head."

Ordered that the proprietors of ferries at the Town of
Terre Haute pay ten dollars for the year 1818"

"February 10, 1819.

On the application of Curtis Gilbert and Charles B.
Modesitt for the establishment of a ferry across the Wabash river
from Lots 256 and 257 at the mouth of Ohio Street, it is ordered
Com. that said ferry be and it is hereby established; that the pro-
Record prietors thereof procure and keep the same quality of crafts and
1.p.48 hands, and that they be allowed the same rates of ferriage as
have heretofore been allowed to ferries established at the Town
of Terre Haute.

"January 9, 1840.

Comr.

Record 3, Ferry operated by Ninevah Shaw at point on Wabash river
p. 153

opposite Town of Darwin, Illinois."

" September, 1819

On application of Joseph Malcolm a ferry was established

in Fractional Section Seven, Township Eleven North, Range Ten

Comr.

West", being south and west of the grain elevator on the Prairieton

Record

road, and being near or on the Hulman farm.

.p.52

& 277

On application of Charles B. Modesitt a ferry was estab-

Com.Rec.1

lished February 11, 1823 at Walnut Street.

P.202

Comr.

On application of James Farrington a ferry was established

at the "mouth of Wabash Street" July 12, 1825.

1,p.278

On application of Walter W. Early a ferry was established

June 8, 1842 from street or road running east from the Wabash

Comr.

river on the section line between Sections Sixteen and Twenty-

Rec.3,

one, Township Twelve, North, Range Nine West, across the river to

p.311

land owned by Early. The establishing of this ferry was vigor-

ously protested by James Farrington. This ferry was at the foot

of what is now Locust Street, over the Wabash River.

The first steam ferryboat on the Wabash river was owned

Beckwoth's

by James Farrington at his ferry, in 1846.

History of

Vigo County

Oakey's History, p. 180.

In 1842 the following ferries were taxed:

James Farrington's ferry at Terre Haute - - - - -	\$35.00
Charles B. Modesit's Ferry - - - - -	25.00
Walter W. Early's Ferry - - - - -	10.00
Ninevah Shaw's Ferry - - - - -	10.00
Ferries in other parts of County - - - - -	5.00
License to vend wooden, brass & composition clocks - -	75.00
License to sell liquor - - - - -	30.00

Oakey's History, p. 180. First bridge over Wabash river
December, 1846. Described the opening day.

Toll fees.

Describes the wooden structure as open and uncovered.

Says that during the sixties the draw of the bridge gave
way under the weight of a drove of cattle and several persons
were drowned.

This is the only bridge mentioned at this place in this
book.

BRIDGES

Early in 1846 the Terre Haute Drawbridge Company was organized with a capital stock of \$12,000; the first officers were John Boudinot, Jr., President; W. K. Edwards, Secretary; Levi G. Warren, Treasurer. Chauncey Rose and Albert Lang were directors. The bridge was located at the foot of Ohio Street and its estimated cost was \$11,000. Major Thompson Hall and T. A. Madison were the contractors. The bridge was completed by October, 1846. The bridge was completed and open for travel on Christmas Day. John B. Murphy was first bridge keeper. This first bridge was a wooden structure, made of long pilings, resting on mud sills and carrying the bridge proper on their top. These pilings and mud sills formed the piers for the bridge and the road or floor was carried on the stringers which rested on the top of these wooden pilings. There were several spans to the bridge and there was a draw in it through which the steamboats passed.

In September 1852 two spans of the draw bridge fell into the river. One of them was the new span; a man, probably Benjamin Quick, was killed outright and several others were severely injured. Benjamin McKeen was standing on the old span at the time, but escaped unhurt. During the preceding March the steamboat "American Star", on coming down the river, struck the bridge and carried away an entire span and about one-half of the draw.

During the early freshets of 1858 the bridge over the Wabash was rendered impassable by the giving away of the trestle work under the east span. In the years 1853 to 1855 high water finally carried away the entire bridge with the exception of some tressle work.

Misc. Rec. In 1856 the Terre Haute Drawbridge Company articles of association were filed, and this record seems to indicate the intention of this company to build a new bridge at Wabash street.

Comr. I have not been able to find the record of the building of this second bridge, but in January 1865, the Terre Haute Drawbridge Company, W. K. Edwards, President, was authorized by the County Commissioners to charge toll.

This second bridge across the Wabash river was a toll bridge until it was purchased by Vigo County from the bridge company in about 1874 for the sum of \$80,000. This second bridge was a wooden structure with five or six spans, resting on heavy stone abutments at the banks and resting upon substantial limestone piers. It was entirely covered on the sides and top. The sides were of boards running up and down and had a draw near the west side for steamboats to pass. This draw was in two parts and lifted up by the use of ropes, pulleys and windlasses. The roof of this bridge was an ordinary shingle roof; the bridge was painted dark brown; it had two driveways, with wooden floor of heavy planking, three or four inches thick and eight inches wide; these heavy planks were loose and it made a great rattle and noise when a wagon went across. There was a bridge tender at each end to collect toll and no one was allowed to drive faster than a walk when going over this bridge. The road across the bottoms extended from the west end of this bridge a little north of west to West Terre Haute, or as it was then called, Macksville. This name came about by reason of the fact that a man by the name of MacQuilkin laid out the first town on that side of the

river and on the bluff along the National Road. This subdivision is now there, but the name of the town which spread out along the Paris Road was changed to West Terre Haute.

About a half mile from the west end of the bridge was constructed a trestle work of 600 to 800 feet, through which the water passed during the time of high water. This has since been closed up. This same sort of trestle work was constructed by both the Vandalia and Terre Haute and Alton Railroads, and during high water practically as much water as was in the Wabash river flowed very swiftly through these trestles which were wooden pilings and stringers. But since the building of the pavement from Terre Haute to West Terre Haute, this trestle work was abandoned and the space was filled in with solid earth, and afterwards the trestle work on both the Vandalia and Big Four Railroads was filled in.

Before this grade was built there was a road, or public highway from the west river bank out across the bottom in a straight line, connecting the west end of the first bridge with what is now the National Road in West Terre Haute. This National road was laid out through the bottoms on the same straight line and same slant as Wabash Avenue in Terre Haute and the National Road through Macksville, and before the bridge at Wabash Avenue was built this grade on the National Road was graded up some height and the road was the one most used, but after building the bridge at Wabash Avenue and the building of the grade on the Paris road, the National road across the bottoms was not used, although I believe there was never any order entered by the County Commissioners abandoning this road or highway. I am attaching to this paper a picture of the old wooden bridge at the

at the foot of Wabash Avenue. Inset - Picture of the new iron bridge which replaced the old wooden bridge. This photograph was presented by F. J. Weldele & Co. Printers, 25 South Fifth Street for use in this paper.

While the bridge at Wabash Street was a toll bridge, there was a roadway leading from what is now Water Street along the north side of the highway and down to the water's edge north of the bridge, and during low water in the Wabash river, horses and wagons could ford the river at this point, driving along just north of the bridge and coming out on the west side just north of the grade; people using this highway traveled along the north side of the grade until they reached the high ground at the east edge of West Terre Haute, when they went up the hill and into the little town. Many people crossed the river and used this road to avoid paying toll. In the wintertime for several months each year the ice was frozen enough to bear up teams and loaded wagons, and many people used this driveway and drove across the ice with their loads to West Terre Haute. This roadway across the bottoms from the west end of the bridge to West Terre Haute was a very common driveway for many years, when someone who owns the property along the north side of the Paris road started filling in the east end of this roadway and the same has become impassable.

This is the same bridge on the draw of which was hung a negro, who was taken from the jail by a mob, Feb. 12, 1901, and whose body was afterwards cut down and burned on the sandbar on the west side of the river.

Charles M. Trout tells a story concerning this old covered wagon bridge - the second drawbridge that was built - the one at the foot of Wabash Street. Charley says this happened when he was three or four years old, and that the occurrence was part of the celebration of the opening of the bridge for traffic. It was advertised in the newspapers in Terre Haute and all through this part of the country that on this certain day one who called himself Prof. Gander would fly over this new wagon bridge over the Wabash river. Considerable advertising was given to this event and on the day an immense crowd gathered to see the wonderful performance which was to take place. Prof. Gander would shortly fly over the bridge over the Wabash river. Charley went down to see the event with his father, and remembers well the big crowd and a man in gaudy, circus tights, going through the crowd taking up a collection. After some time was spent in gathering up this collection, the word was passed that "Prof Gander" was now about to fly over the bridge and in a few minutes a large gander was pushed through an opening on the south side of the bridge, and "Prof Gander" flew over the bridge and disappeared in the distance. It never occurred to the spectators that a hoax was being perpetrated on them until this event happened, and then they wanted to get hold of "Prof. Gander" and tear him to pieces, but he was too smart and had started across the bridge going west sometime in advance and had disappeared in the forest and jungle which covered the west bank of the Wabash river all through the bottoms and he was never seen afterwards. But Charley says he remembers seeing the gander fly over the bridge.

The next bridge across the Wabash river was a wooden structure, built by the contractors who had the contract for building the present iron bridge. This was a temporary bridge to take care of the traffic during the construction of the new bridge; this temporary bridge was built at the foot of Ohio Street and was not much over ten feet above the water at low water mark and was just a set of pilings with stringers on top of them all the way across, with a loose floor and guard-rail on each side.

This bridge went down during high water and ice jam before the new bridge was fully completed, but the bridge was so nearly finished that one side could be temporarily used while the other side was being completed.

BRIDGES ACROSS THE WABASH RIVER, TERRE HAUTE, INDIANA

Wooden Bridge built 1860 to 1863.



Iron bridge 1903-1905, replacing wooden bridge at Wabash Avenue.

Donated by F. J. Weldell, printer 25 A. 5th St.

~~This is the same bridge on the draw of which was hung a
negro, who was taken from the jail by a mob on the day of
XXXXXXXXXX 18 XXXX and whose body was afterwards cut down and
burned on the sand bar on the west side of the river.~~

Com
Rec
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The iron bridge across the Wabash river in 1930, was constructed under the authority of the County Commissioners, and the contract for the construction of this bridge was let on June 18th, 1903, the contract being let to the Lafayette Engineering Company for the sum of \$271,200. The engineers who drew the plans for the bridge were Howe and Starbuck. Mr. Howe was a professor of engineering at the Rose Polytechnic Institute and Mr. Starbuck was one of the chief engineers for the Vandalia-Pennsylvania Railroad Company, and the bridge was constructed under their supervision. On December 27, 1905, the Lafayette Engineering Company reported to the County Commissioners that the bridge had been completed according to the plans and specifications and that the price was \$271,200, and the extras nil. This is unlike many contracts on public and private work at the present time, where many extras are added after the contract is let, while in this case, under the supervision of these engineers, the bridge was constructed according to plans and specifications and not one cent of extras was added to the contract price.

Com
Rec
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P. 356

The bridge is constructed with a roadway the same width as the roadway in Wabash Avenue, but with sidewalks of about five feet in width. The bridge is built upon concrete abutments and concrete piers, resting upon pilings, driven in the bottom of the river as far as it was possible, supposed to be thirty or forty feet long. The bridge itself is of steel I-beams which rest on

abutments and pier, and from pier to pier, and on these I beams rest the roadway and walkway of brick and concrete surface. A steel partition on each side of the roadway separates the driveway from the sidewalks and a rail some four or five feet high on the outside protects pedestrians from falling off.

In 1913, after the high water, somebody questioned the security of the bridge and a diver was employed to go down in the bottom of the river and look at the piling on which the piers rested. This diver reported that the sand had been washed from under several of the piers and that they were resting on the pilings which were exposed for some ten feet below the pier and the earth and gravel in the bottom of the river. This condition was corrected by mixing concrete in a flatboat and pouring it through a tube down into the water in and around the pilings that were under the piers until the space was completely filled.

After this bridge had been constructed, a man by the name of Peter Chase, Trustee, petitioned the County Commissioners for permission to operate a street railroad over this bridge, and on December 19, 1906, the County Commissioners accepted the terms of the petition and a contract was made with such Trustee for the privilege of operating a street car line over the bridge for a fixed sum per year, and the Trustee paid to the County Commissioners at this time the sum of \$1000 as a part of the rental.

On July 15th, 1905

Commrs
Rec.
28
p.296

The Terre Haute Traction & Light Company petitioned the County Commissioners for the privilege of ~~crossing~~ the new river bridge, claiming a right to use the bridge because of the privilege granted of the use of all of the highways in the county.

On page 334, Aug. 7th, 1905, this petition was rejected by the County Commissioners.

On page 404 of the same record, the county commissioners
Sept. 15th, 1905
entered an order/granting the Terre Haute Traction & Light Company the privilege, upon the payment of each year, under certain conditions set out in the order, and the County Commissioners reserving the right to grant the same privilege to any other traction company wishing to cross this bridge. The County having built the bridge complete, including the ties and rails, retained its ownership in this part of the bridge, but ~~one~~ of the provisions was that the Traction Company should furnish its own electricy and equipment for carrying the trolley wires and other electrical equipment.

After this bridge was finished and in the course of some four or five years, ~~a~~ ^{the} grade between the west end of the bridge and West Terre Haute was raised somewhat and a brick surface pavement was constructed. The railroad company which operated its line across the bridge secured a right of way privilege of laying its tracks along the south side of the grade ~~after~~ the grade had been widened some fifteen feet.

~~been widened since October 1907.~~ Sometime later, about 1910, a concrete fence was constructed along the north side of this roadway on top of the grade. During the high water of 1913, the water flowed over this grade and this pavement. For some distance along the pavement the water was about three feet deep and came up to within 200 or 300 feet of the end of the bridge which is considerably higher than the roadway 300 feet west of the west end of the bridge. During this high water all of the railroad track on the south side of the grade was washed away and the embankment on the south side of the pavement on top of the grade was all washed out, but the grade itself on which rested the pavement was not materially injured; none of it washed out. It seems that the force of the water, rushing across the smooth paved surface had no effect on it, but when it struck the gravel and dirt under the railroad track on the south side, it washed this earth completely away from the railroad track.

In the fall of 1889 the draw of the covered wagon bridge needed repair and was closed to traffic for awhile, and during the time, Mr. Frank Gosnell was given authority by the County Commissioners to operate a ferry to accommodate the traffic across the river at Terre Haute. *and this ferry was operated by Frank Gosnell and his brother Charles Gosnell.*

First Railroad Bridge

The first railroad bridge across the Wabash river was the Terre Haute & Alton Railroad bridge, now the Big Four Railroad.

The Terre Haute & Alton Railroad company was organized about 1853, and sometime between that and 1855 the first bridge of this railroad company was built across the Wabash river.

Letter
of
C. H.
Witt,
Jany 27
1930

The first passenger train was scheduled to cross the bridge in 1856. It was in the same location as the present bridge. It was built on timber foundations and was a wooden structure, entirely covered and with but a single track. This bridge was replaced by stone piers about 1860, and rebuilt with iron spans and renewed stone piers at various times - 1860 - 1883 - 1885 - 1887 - 1900 - 1904.

In 1893 two freight trains came together in a head-on collision on the Big Four Railroad bridge. A person who was an eye witness of this collision told of it to the writer of this article. The person who witnessed the occurrence was standing some distance north of the water works pumping station, where he had full view of the river and the bridge, and of its east and west approaches. The freight train from the east started across the bridge and he then saw a freight train coming from the west down the grade and toward the bridge around the curve west of the bridge. The train from the east was not going fast but the train from the west was coming at full speed. The engineer on the westbound train apparently saw the freight coming from the west and tried to stop to avoid an accident, but his train was too heavy and he had not brought his train to a standstill when the two engines came together on the third span from

the east end. Both engines seemed to rear up their front ends until they were almost standing on end and then came down square on the bridge, and the engines and span of the bridge fell into the river together. Apparently none of the cars of the west-bound train were carried on to the bridge and into the river. The train that came from the west was a freight train and the cars next to the engine were some of them loaded with cattle. Some of the cars stood on end and all of the cattle slid down into the lower end where they made a terrible noise and commotion and it was impossible to help them.

One of the cars that went into the river broke open, and was filled with cotton bales, and these cotton bales floated down the river, and several of them were picked up by various people along the river bank. They thought they had quite a "find" until the railroad agents came along and took their "find" away from them, this not being a case of "finders being keepers". An engineer named Ross lost his life in this accident.

About 1900, in the wintertime, there was quite a cold spell, and the river froze over solid, and then an ice jam formed north of the Big Four Bridge; then something happened to open up the river slightly on the west side and between the draw pier and one of the other piers, and through this opening was a stream of ice kept moving at about the same speed as the water in the river, pushing and crunching along the frozen ice on each side, and going through under the bridge and past the piers. After this stream of ice had been going for sometime, one morning about ten o'clock a freight train, coming from the west, came around the curve on the grade, head on, when the engineer saw that the track

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Donated by Perry H. K. Tribune.

History of Vigo County by H. O. Beckwith
P. 514

was out of line, he then knew the pier had been undermined and that his train was going into the river, and that is what happened. When the engine struck this span of the bridge, it gave way and the engine fell into the river almost south of the pier east of the draw pier; it fell on the ice and went through. Several cars also went into the river at this time.

VANDALIA RAILROAD BRIDGES

The St. Louis, Vandalia and Terre Haute Railroad was opened to St. Louis June 12, 1870, and the first train crossed the Wabash river April 26, 1870. This bridge was an iron bridge, and was the first iron bridge across the river in Vigo County. The cost of the bridge was \$150,000. Chauncey Twaddle was the bridge inspector for many years and operated a row-boat rental business at the same time. He kept this position as long as he lived. He was the father of Miss Alice Twaddle who was recently taken into the Fairbanks Home at Terre Haute.

Sometime in the '70's the Wabash river froze over solid and the boys had the pleasure of going skating; They sometimes walked across this Vandalia Railroad bridge; on one occasion Will Carbie, who later was employed by the Button Book Store, and still later was with the J. R. Duncan Company, and now of Los Angeles, California, went skating, and while coming back across this bridge, slipped and fell through the ties between the rails. At the time he fell he had his skates fastened together and hanging over his shoulder, and when he went through one skate caught crosswise of the ties and held him suspended in the air some forty feet above the ice. Several companions with him grabbed the skate and pulled him back through between the ties and he escaped unhurt.

From a letter received from Mr. C. G. Grove, Division Engineer of the Pennsylvania Railroad Company at Terre Haute, Indiana, I received the information that the first bridge across the Wabash river of this railroad was actually put into service in December, 1869, and that this bridge consisted of a quad-iron rangular truss/bridge made up of five 160 foot clear spans, the center span forming the draw span to permit the passage of boats up and down the river. The cost of the original bridge was -

Sub-structure,	\$75,091.76
Superstructure	<u>92,687.08</u>
Total	\$167,778.84

This bridge was rebuilt in 1888 by a heavy steel and iron bridge; it was built upon the old sub-structure which was reinforced, the reinforcing of the sub-structure and the cost of the new bridge amounted to \$55,422.35.

I have also received from Mr. Grove for use of our Historical Society a photograph of the first bridge across the Wabash river, built in December, 1869. Mr. Grove very kindly offered to give this picture, with its proper frame, to this society if we were able to take care of it and preserve it. Copy of Mr. Grove's letter is as follows:-

"Terre Haute, Ind., January 14, 1930 - 9

Mr. George A. Scott,
663½ Wabash Avenue,
Terre Haute, Ind.

Dear Sir:

Your letter of December 30th requesting information regarding the first bridge of the Vandalia Railroad Company, built across the Wabash River:

From our Superintendents' Annual Report of Jan. 1, 1879 we find that the original bridge of the T.H. & I. R.R. over the Wabash River at Terre Haute, Indiana, was built in connection with the State Line extension. This would mean that the bridge was placed in service in December, 1869. It consisted of a

quadrangular truss iron bridge of five 160' clear spans, the center span forming the draw span to permit the passage of boats up and down the river. Although not mentioned in the above report, there was evidently erected at the west end of the above bridge a six span pile trestle known as the west approach to the bridge. The cost of the original bridge was -

Sub-structure	\$75,091.76
Superstructure	<u>92,687.08</u>
Total	\$167,778.84

From the Superintendents' Annual report of 1888, a heavy steel and iron bridge was again erected over the Wabash River to replace the old structure, the new bridge consisting of four single track through Pratt Truss spans each 163' long and one draw span 164' long. The old sub-structure was reinforced and new superstructure erected in 1888. The cost of the second bridge was -

Reinforcing sub-structure	2,038.66
Superstructure,	<u>53,383.69</u>
Total	55,422.35

The above work does not include the repairs to the approach tressle at the west end of the bridge.

The above gives you the information concerning the original bridge over the river and if you desire we will be glad to furnish you information regarding the new bridge which has recently been erected.

As a matter of interest and in case you may desire to use the same, I am sending you a photograph of the original bridge built in December, 1869 over the Wabash river. If you have no use for this photograph, will you kindly return the same, but if you desire to keep it as a matter of historical interest, I will be glad to furnish you the original frame that was on the picture.

Yours truly,

C. G. Grove,
Division Engineer."

The second bridge of the Terre Haute & Indianapolis - Vandalia - Pennsylvania System was a single track bridge like the first one and was used until 1928, when the present new bridge was constructed.

The following is a quotation from a letter from Mr. C. G. Grove, dated January 27, 1930.

"The new P. R.R. bridge over the Wabash River at Terre Haute consists of a double track Solid floor deck plate girder bridge consisting of eight spans each 125' in length, the total length being 1004.5' from back wall to back wall. By "solid floor bridge" is meant reinforced concrete slabs which rest on the girders with a side walk on each side and hand railing. The new bridge was built north of and in the clear of the old bridge at a skew of 165' north of the old bridge at the east end and 64-1/2' at the west end. The grade of the track on the new bridge was raised 7-1/2' higher than the old bridge. The clearance of the new bridge is 5'5" above the high water mark of 1913 when the river stage was 31'. The foundations for the concrete piers were put down to a depth of from 40' to 50' below the river bed and this work was under contract with the Dravo Contracting Company of Pittsburgh who also built the concrete floor and removed the old bridge. The steel girders were erected by the Seaboard Construction Company of Philadelphia, Pa. and the Mellon Construction Company of Pittsburgh did the grading and track work. The cost of the ^{new} bridge was \$536,600 divided -

Superstructure,	\$236,870
Substructure,	299,730

Included in this project was the construction of double track reinforced concrete pile trestle bridge 397' long west of the river bridge for high water overflow and also the extension of double track from First Street, Terre Haute, to Macksville tower at West Terre Haute, a distance of 1.92 miles. The total cost of the project including the new bridge was \$944,028.90.

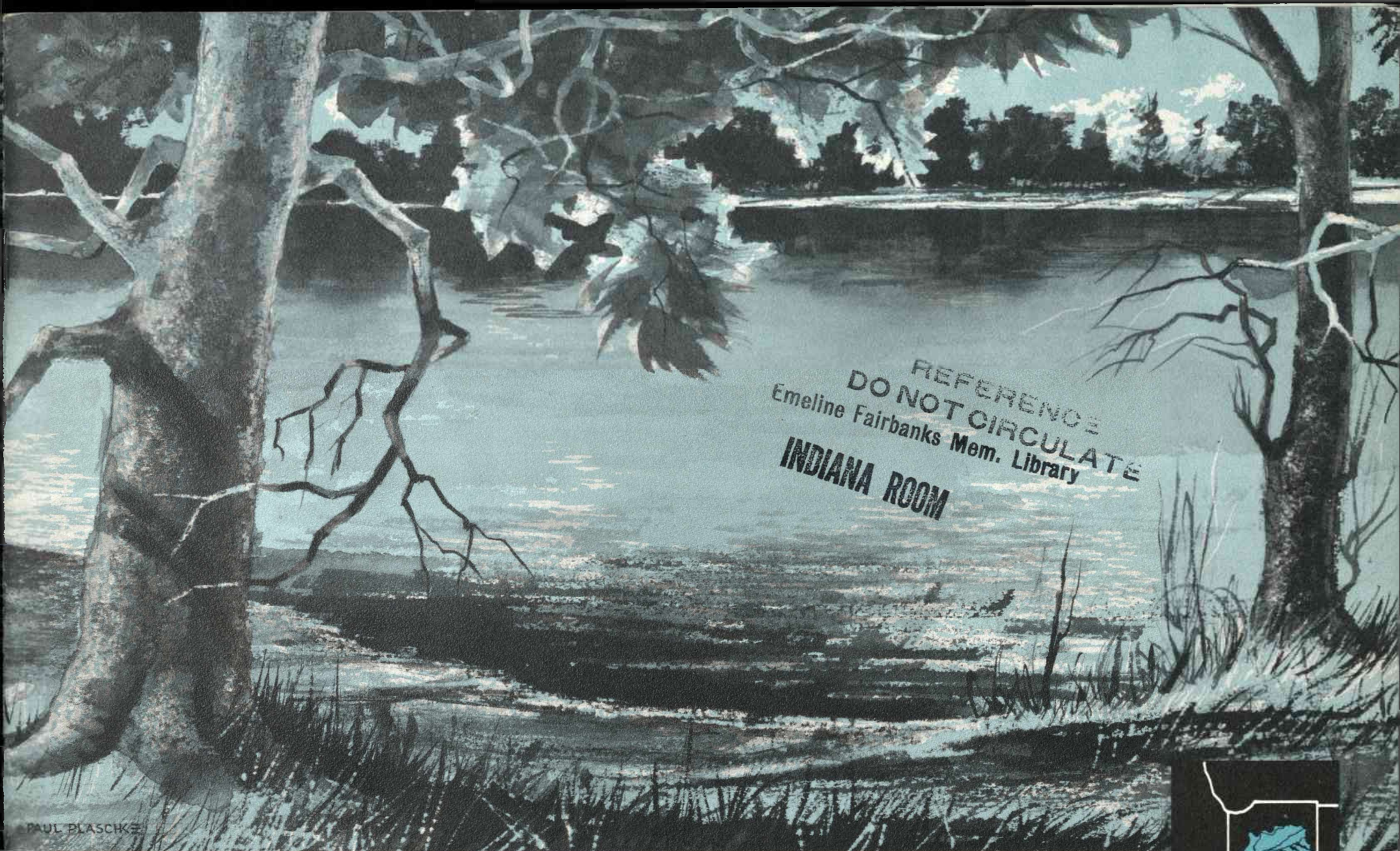
SOUTHERN INDIANA RAILROAD BRIDGE

The bridge across the Wabash river known as the Southern Indiana Bridge was built in 1905 and 1906 by the Chicago Southern Railway Company, in Section 28, Township 13 North, Range 9 West being Otter Creek and Fayette Townships. It is now owned by the Chicago, Milwaukee, St. Paul and Pacific Railroad Company. It cost, when built, about \$186,000. The bridge is made up of four stone piers and one concrete abutment. It is a steel construction bridge in three spans of 180' each and one span 190' in length and carries a single track.

The approach to this bridge on the south is a solid earth-filled grade across a mile of bottom land. The approach on the north side is a grade and fill about one mile long, which has in it a trestle work of wood.

The south fill washed out in the high water of 1913, but the bridge itself is about six feet above the 1913 high water mark.

*Geo. A. Scott.
Feby. 11th 1930.*



REFERENCE
DO NOT CIRCULATE
Emeline Fairbanks Mem. Library
INDIANA ROOM

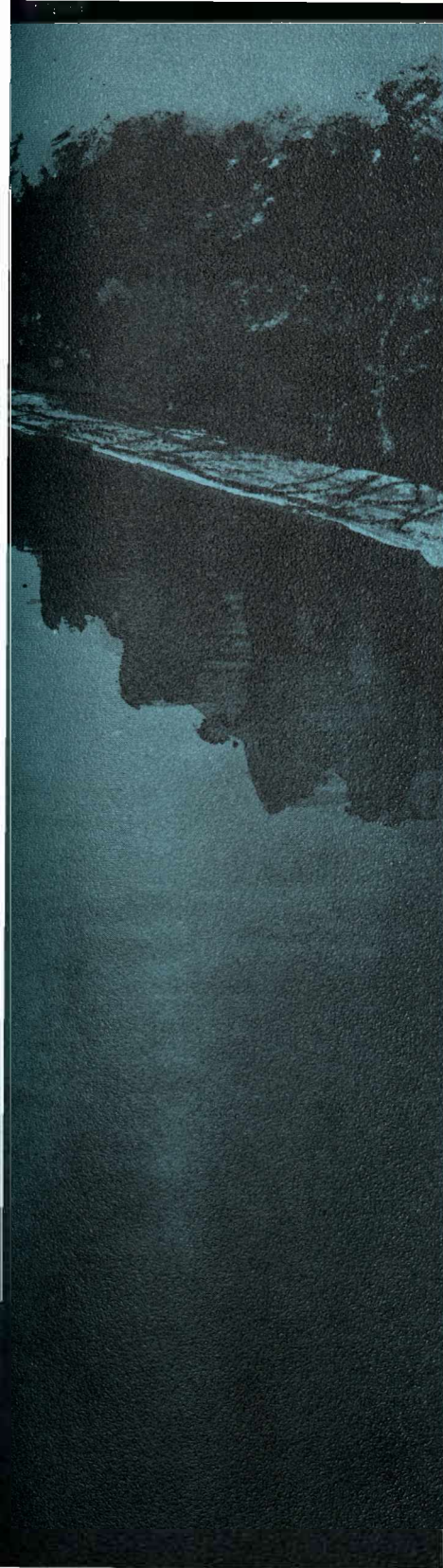
PAUL BLASCHKE

THE WABASH RIVER BASIN

WATER RESOURCES PLANNING







INTRODUCTION

Throughout his brief span on earth, man has depended on three basic natural resources for his existence: air, land and water. Of these three, none has been more neglected by man than water. Yet without water, the land produces nothing; without water, life vanishes from the face of the earth. Civilizations have grown and flourished where water was abundant. Where water has disappeared, civilizations have withered and died. Babylon is a noteworthy example.

In spite of his complete dependence on water, man has been lax in managing and conserving this precious resource. He has allowed rainfall to flow uncontrolled from the land to the sea, ravaging his cities and his farms on the way. He has carelessly allowed his streams and lakes to become contaminated with wastes to the point where their waters endanger his own survival. In short, he has not measured up to his responsibilities for stewardship.

In the beginning, this difference mattered little. Water was plentiful and soil was expendable. Floods could be accepted as inevitable because there was relatively little of value for them to destroy. Today, however, as the world moves towards the end of the twentieth century, indifference has changed to serious concern. There is hardly a country or an area on the face of the earth that is not faced with critical problems in the conservation of its water and related land resources. Indeed, in many cases, the solution of these problems may well be the key to future growth or even survival.

In this respect the Wabash River Valley is no exception. Until recently the plentiful rains of the valley have fallen and run off with no control, carrying with them valuable and irreplaceable soil. Until recently, human and industrial wastes have been poured into its streams at an



ever increasing rate, destroying fish and wildlife, limiting recreation, and threatening human health. Many communities have suffered intolerable flood damage only to find themselves confronted a few months later with water shortages of an equally damaging character.

Fortunately, the people of the Wabash Valley began to recognize the seriousness of their water problems before they were overwhelmed by them. In 1946, the first major multipurpose reservoir in the basin was funded by Congress for construction and this project came into operation in 1953. Since that date two additional major multipurpose reservoirs have been completed and three more are approaching operational readiness. Concurrently, small watershed programs are being planned and constructed by the Soil Conservation Service. In addition, federally sponsored local flood protection projects have been authorized, several have been completed or are under construction, and others are expected to be started in the immediate future.

The most important single step taken by the people of the valley, however, was taken in 1962, when, acting through their elected representatives in the United States Congress, they obtained financial support for a comprehensive study of the water and related land resources of the Wabash Basin to serve as a basis for their future conservation and enhancement. The nature, scope, and objectives of this study, which is now well underway and which, in the opinion of many, is vital to the future well-being of the Valley, is the subject of this information booklet which has been prepared as a public service by the United States Army Corps of Engineers and the many Federal, State and local agencies participating in the study. Its objective is to inform. We hope that it succeeds.



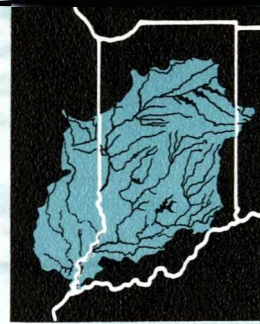
PROBLEMS OF THE WABASH

The Wabash River, a major tributary of the Ohio River, originates in Mercer County, Ohio, about 15 miles east of the Indiana-Ohio state line. It flows in a northwesterly direction to the vicinity of Huntington, Indiana, and then in a westerly and southerly direction until it joins the Ohio River about halfway between Mount Vernon, Indiana, and Shawneetown, Illinois. The principal tributaries entering the Wabash along its 475 miles of length are the Salamonie, the Mississinewa, the White, the Embarrass, the Little Wabash, and the Patoka rivers. Together the Wabash River and all its tributaries drain an area of 33,100 square miles which encompasses about 2/3 of Indiana, about 1/6 of Illinois, and about 319 square miles of Ohio.

The terrain in the Wabash River drainage basin varies considerably from one area to another. In the north the land has a gently rolling character, while in the south it tends to be hilly. However, portions of the Wabash and many of its tributaries flow through flat country with relatively poor natural drainage. Throughout the basin, streambeds have relatively little slope and their banks for the most part are shallow.

Like the terrain, the economic characteristics of the basin vary considerably from one area to another. Although, traditionally, most of the basin has been devoted to agriculture, significant industrialization has taken place in numerous locations. Principal among these are Indianapolis, Champaign-Urbana, Terre Haute, Kokomo and Muncie. Increased industrialization is in prospect throughout the basin.

In 1960, the population of the Wabash basin was about 3,100,000. Of this number, approximately half were living in rural areas and half in urban developments. Looking forward to the year 2020, population projections indicate that the total population will increase to about 6,200,000, of which some 25% will be in rural areas, while 75% will be located in cities and towns.



These factors of terrain, economic development and population growth all have a direct bearing on the water problems of the basin. The terrain is susceptible to flooding and limits to a considerable degree the opportunities for major impoundments of water. Economic development and population growth, on the other hand, require the reduction of flooding and an increase in the availability of water for useful purposes.

As to the supply of water, the Wabash River basin receives, in a normal year, from 40 to 45 inches of rainfall. This is an excellent total supply amounting to more than 21,500 gallons per day for each man, woman and child living in the basin. However, the rainfall is not equally distributed either in time or in location. Nor is it managed after it falls in such a way that it can be used to meet all the needs of the basin.

Flow patterns of the Wabash River and its tributaries are characterized by flood flows which cause extensive damage and by low flows which limit water use and create pollution problems. Over the years in which records have been kept, flows in the lower Wabash River have varied from 1,500 cubic feet per second, or about 5% of normal, to about 500,000 cubic feet per second, or 1,600% of normal.

When high flows are experienced, flooding is extensive; in fact, the average annual damages in the basin, as reduced by the limited flood control works built to date, presently amount to about \$35,000,000.

Conversely, when flows are extremely low, withdrawals of water for municipal, industrial and agricultural water supply are seriously limited in many areas of the basin. For example, in October 1963, the community of Austin, Indiana, was able to maintain economic survival only by dint of the most extreme measures of water con-

servation. Comparable situations have been experienced in Charleston, Illinois, and in some smaller communities.

Under conditions of extreme low flow, pollution problems also become serious. In October 1963 and again in October 1964, the discharge of treated sewage from Indianapolis into the West Fork of the White River exceeded the natural flow of the stream by a ratio of 2 to 1. Public Health authorities consider that the natural flow of a stream must exceed the input of treated waste by a ratio of at least 3 to 1 if there is to be reasonable protection of public health, fish, wildlife and recreation resources. Although the problems experienced below Indianapolis during recent drought seasons have been the most severe of any encountered in the basin, there are serious problems of a comparable nature facing many other localities.

In addition to overcoming problems of water supply, water pollution and flooding, there are other pressing needs for water resources development in the basin. Among the foremost of these is the need for developing water resources suitable for recreation purposes. The Wabash basin, like most of the United States, is confronted today with an increasing population having more leisure time and more expendable income, living predominantly in cities, and seeking healthful outdoor recreation opportunities associated with water. The limited facilities presently available in the Wabash basin to meet these needs are seriously over-crowded throughout the summer months. Unless additional facilities are made available, the people of the basin will necessarily forego significant opportunities for economic and social progress.

Changes in economic patterns and neglect of water resources management also have had an adverse effect on the fish and wildlife of the region. Since water resource developments, if properly managed, can contribute significantly to the enhancement of fish and wildlife and to the recreation potential which they offer, this problem requires consideration along with others of a more obvious nature.



PROBLEMS ...

Although the opportunities for generation of hydro-electric power within the Wabash basin are limited because of the nature of the terrain, some possibilities may exist. Consequently, in considering any program of water resources development the needs for additional electric power and the merits of its generation from hydropower deserve careful examination.

The use of water for irrigation purposes is a possibility which has received only limited attention in the Wabash basin in the past. Currently, there are indications that economic benefits might be achieved if additional supplies could be made available economically for this purpose. Consequently, needs for water for this purpose, like needs for hydro-power generation, merit serious consideration.

Finally, there is the problem of navigation. Anyone who has observed the economic effects of the Ohio River and the other great navigable waterways of the United States has certainly noted the beneficial impact of major navigational development on the region and on the nation as a whole. Although previous studies of the navigation potential of the Wabash River have been unable to establish economic justification, economic conditions within the basin are constantly changing. Therefore, the question of navigation deserves periodic review.

In summary, the Wabash River basin is faced with a wide variety of problems relating to water and its use. All these problems are inter-related to some degree and all of them must be solved without undue delay if the region is to maintain its economic and social progress.

Over-crowded recreation areas indicate a need for more recreation areas.

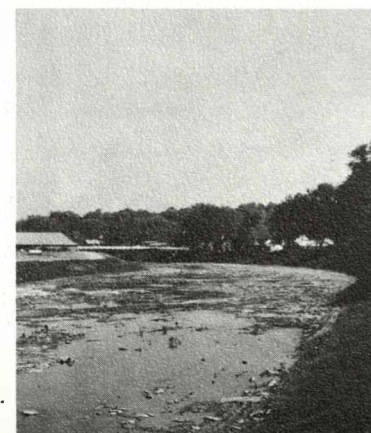
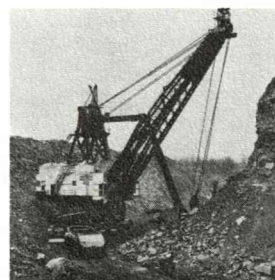


Detergent foam on White River.

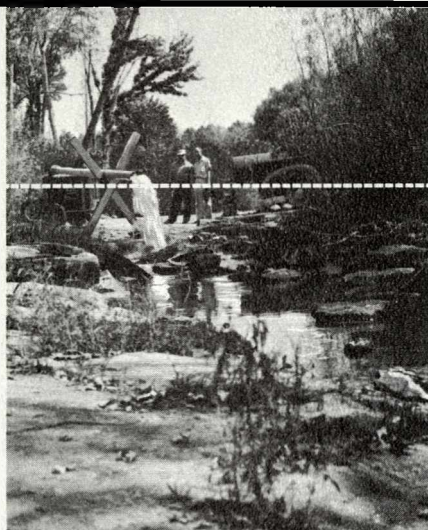
Flooded farmlands near New Harmony, Indiana.



Uncontrolled mine drainage can pollute waterways.



Typical low flow condition.



Austin suffers water shortage, October 1963. Dashed line is normal water level.

Stream pollution sampling in the Wabash Basin.



Town of Jasper, Indiana, flooded by high water March, 1964.



Fish killed by pollution.

Land resources damaged by erosion.



SOLUTIONS CONSIDERED

Having examined briefly some of the water problems facing the Wabash basin, it would be well at this point to consider some possible solutions to these problems, beginning with those relating to flooding.

One obvious, but often overlooked, means of reducing flood damages is to move out of the flood plain. In highly developed areas, this may be neither a practical nor desirable solution. However, within the Wabash basin, as within other basins, lesser developments exist which cannot be fully protected from floods except at prohibitive cost. In such cases consideration could be given to moving the development to a less flood-prone area. In fact, this has been done in a few instances, as for example in the case of Shawneetown, Illinois, where some Federal financial assistance was provided in lieu of flood protection.

Although moving out of a flood-prone area may seldom be a practical solution to a flood problem, it is possible to limit future flood damage by restricting developments on flood plains to those which must of necessity be located there. In recent years many new subdivisions, for example, have been developed in areas subject to frequent flooding. In most instances these developments could just as well have taken place on higher ground. If local governments would adopt ordinances for flood plain zoning, they would make a real contribution to the solution of future flooding problems in their area of jurisdiction.

When for economic or other reasons, it is essential to develop facilities in flood-prone areas, these facilities can often be designed to survive floods without damage to life or property. Since flooding can never be totally eliminated, this approach to new construction deserves serious consideration by local governments and private individuals when planning new facilities on flood plains. Again, flood plain zoning might be applicable.

So far, the solutions discussed for flooding problems have been wholly within the province of local governments and private individuals. There are other solutions in which agencies of State or Federal government may also play a role.



Before . . . and after channel improvements

SOLUTIONS...

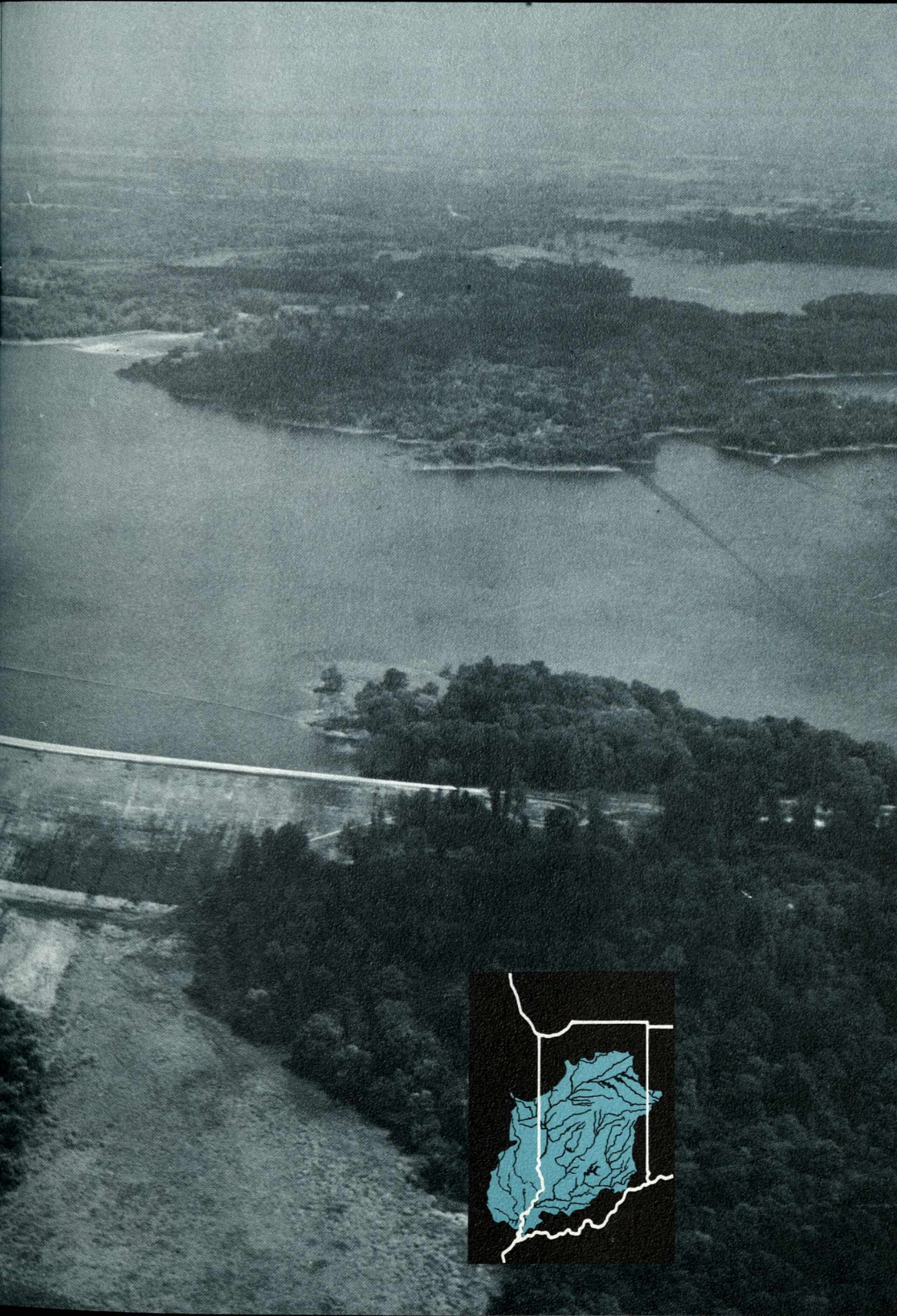
One such solution is the improvement of stream channels. When conditions are favorable, it is often possible to reduce the frequency, height, and duration of floods in a limited area by clearing, widening, deepening, or enlarging natural streambeds. While this method of dealing with local flood problems has its limitations, it nevertheless merits consideration in any program of flood control.

Flood walls and levees may also be used to solve local flooding problems. Within the Wabash basin, the cities of Delphi, Vincennes, Terre Haute, Muncie and Indianapolis have been afforded significant protection by this means. In addition, agricultural lands at a number of points within the basin have been protected by levees, many of them federally financed. Irrespective of other measures taken, local protection projects of this nature constitute an essential element of any sound flood control plan.

In some instances, the construction of "dry" reservoirs with fixed or controllable outlet works, may provide a good solution to flood problems. When a "dry" reservoir is built, it is designed in such a way as to pass normal flows of the stream without impounding water; when flows exceed the capacity of the streambed, the dam impounds water and retains it, to the extent of its capacity, until natural flows have decreased. A few small dams of this type have been constructed within the Wabash basin. Some additional ones may be warranted in the future.

Although all of the aforementioned approaches to problems of flooding have merit, they have an important limita-

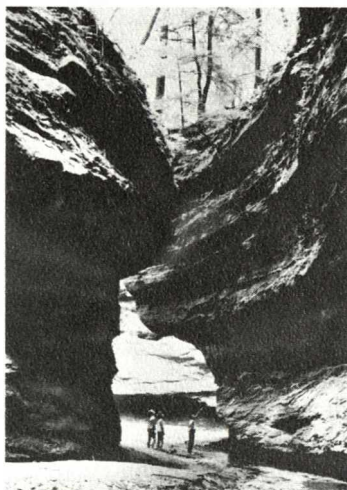




Before . . . and after flood wall.

tion when considered in the context of a broad water resources development program. This is because, while they reduce the effects of flooding, they provide no water for use. When the many needs for water use are considered, it becomes evident that the primary element of a complete water resources development program must be the multipurpose reservoir. Unlike the "dry" reservoir, the multipurpose reservoir is designed not only to collect and retain flood water during periods of high runoff but also to impound runoff for other uses. These other uses may include: water supply for municipal or industrial use, storage for the improvement of water quality or navigation downstream, water for hydro-power, water for irrigation, water for recreation and the enhancement of fish and wildlife resources.

This is not to say that multipurpose reservoirs are a panacea or cure-all for the water ills of the Wabash basin. On the contrary, many other means must be adopted to achieve a sound program of development. Some of these, relating to flood control, have already been discussed. Others include: treatment of industrial and municipal waste waters at their source to reduce stream pollution and limit requirements for water storage to meet dilution requirements; treatment of agricultural lands to improve water runoff characteristics and reduce sedimentation; and control of stripmining to prevent contamination of the water and destruction of the surrounding countryside. In short, a wide variety of solutions to the water problems of the Wabash basin require consideration. Moreover, these solutions need to be examined and applied, not only individually, but in combination, in order to achieve the most favorable plan of development.



Turkey Run State Park, Indiana.

THE COMPREHENSIVE STUDY

To bridge the gap between the water problems of the Wabash River basin and the achievement of solutions to those problems, the Congress of the United States has directed a comprehensive study of the region by responsible Federal agencies in cooperation with State and local governments. The United States Army Corps of Engineers has been charged with responsibility for coordination of the study, which was begun in 1962, and which is scheduled for completion in 1969.

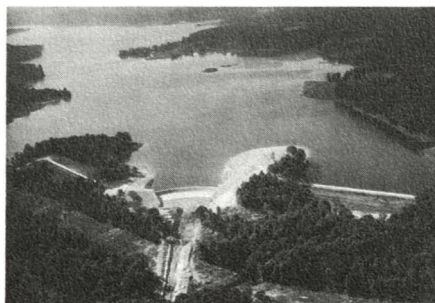
To the question, "What is this comprehensive study?" the answer could be, "It is a study of water and related land resources on a comprehensive basis as to:

AREA. The study covers the entire drainage basin including all tributaries and sub-tributaries.

NEEDS. The study deals with all needs for water in the basin — not with just a few.

RESOURCES. The study examines all land and water resources available to meet water needs. For example, it is just as much concerned with underground water sources as it is with surface runoff in meeting needs for water supply.

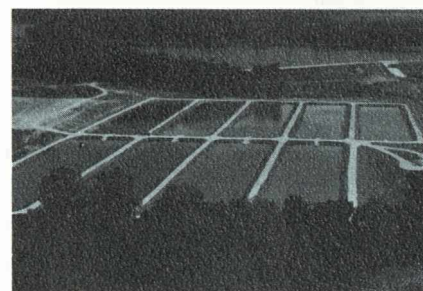
SOLUTIONS TO WATER PROBLEMS. The study considers a wide variety of solutions to present and anticipated water problems in many alternative combinations. For example, it considers not only



Local water supply, Lake Lemon, Indiana.

means for the dilution of wastes in streams but also the more important need for waste treatment at the source; it considers requirements for the treatment of adjoining lands along with the treatment of the streams themselves; it considers reservoirs of various kinds and in various combinations with channel improvements, levees, and floodwalls.

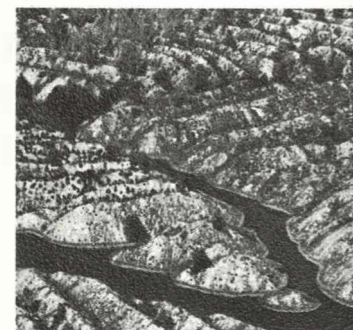
PARTICIPATION. All Federal, State and local agencies having responsibilities or interests in the water resources field are participating with the U. S. Army Engineer District, Louisville, in the conduct of the study.



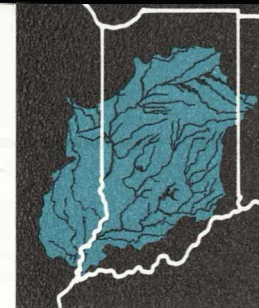
Stephen A. Forbes State Park Dam and Fish Hatchery, Illinois.

TIME. Although the final report of the study, which is scheduled for completion in 1969, will be concerned with long term requirements (through the year 2020), the study procedure requires that, as immediate and short-term future needs are identified, interim reports will be submitted for consideration and possible early action by the Congress. Thus, while the study is designed to meet future needs, progress in solving immediate problems need not be delayed until the final report is finished."

The procedures used in carrying out the comprehensive study are necessarily complex. They begin with economic analyses designed to project economic trends forward to the years 1980, 2000 and 2020. Once these analyses have been made in terms of population, industrialization, and other indicators of economic growth, they are used to estimate future needs for the control and use of water.



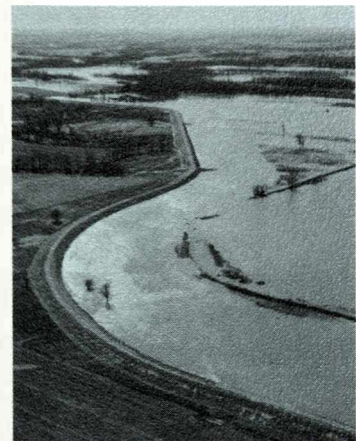
Reclamation of strip-mined land by reforestation.



Concurrently, a wide variety of technical studies are undertaken by the participating agencies to determine ways and means of meeting projected water needs. These technical studies are carefully coordinated among the participants in the study to insure that all alternatives have been considered, that conflicting requirements have been reconciled, and that the plan of development proposed is the one which most nearly meets the needs of the area. This coordinating process is particularly applicable to the small watershed developments of the Department of Agriculture, under Public Law 566, and the larger projects of the Corps of Engineers. Here the two agencies work closely together, not only to assure that specific developments are compatible with each other but also to see to it that each complements the other in achieving the most effective over-all result.



Recreation development at Mansfield Reservoir.



Cropland protected by an agricultural levee.

As economic and technical studies progress, they lead to the formulation of alternative plans of development which are scrutinized carefully to determine comparative technical and economic merits. For in the final analysis, the Congress will neither authorize, nor finance at Federal expense, a water resources development project unless it can be shown to fulfill a need in a manner which will benefit the total economy of the United States.

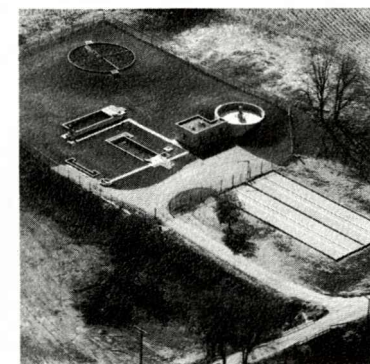
Thus, the recommendations contained in the various interim reports and in the final report of the Wabash comprehensive study will hinge upon the outcome of analyses

relating benefits to the national economy with costs to the nation as a whole.

In making such an analysis of any project, costs are identified on an annual basis and include: interest on the initial investment since, otherwise, interest could be earned on the funds appropriated; expense for maintenance and operation of the project over its economic life; amortization of the original investment; loss of production from lands affected by the project; and replacement of major items of equipment due to obsolescence or prolonged use.

Benefits to the nation are then assessed for each purpose served by the project. For flood control, for example, annual benefits reflect conservative estimates of reductions in flood damage to present and probable future development associated with floods of various occurrence frequencies

and also take into account enhancement of land value due to reduced vulnerability to flooding. For water supply, water quality improvement, recreation, and other project purposes, economic benefits are also computed on a conservative basis and may be related to alternate costs, value of recreation days provided and other appropriate measures. Total annual benefits are then weighed against total annual costs to ascertain whether there will be a net return



Sewage treatment facilities, Anderson, Ind.

to the national economy of more than one dollar for each dollar expended. If so, a favorable recommendation can be made in the report; if not, a substitute means of dealing with the problem will have to be found, or the project abandoned.



Officials break ground for a new reservoir.



PROGRESS TO DATE

Within the Wabash River basin there were, at the end of 1965, three major reservoirs in operation. All three were built by the U.S. Army Corps of Engineers; two under the general authority of the Flood Control Act of 28 June 1938 and one under the Flood Control Act of 3 July 1958.

The first of these, Cagles Mill Reservoir, was started in June 1948 and was completed in June 1953 at a cost of approximately four million dollars. The dam is located 2.8 miles above the mouth of Mill Creek in the Eel River basin, Putnam County, Indiana. Since its completion in June 1953, it has prevented flood damages in an amount estimated at \$8,200,000. It has also produced substantial recreation benefits and has contributed significantly to the improvement of low flows in the fall and early winter of each year.

Mansfield Reservoir, which is located on Racoon Creek, some 30 miles above its confluence with the Wabash River, was completed in July 1960 at a cost of approximately six million dollars. In five years since it has been in operation, it has prevented flood damages in an estimated amount of \$1,600,000. This reservoir has also seen extensive use for recreation; for example, in 1965, 677,000 visitors enjoyed the use of its 2,000-acre lake for boating, fishing, swimming, camping and other outdoor activities. Like Cagles Mill Reservoir, Mansfield Reservoir has also increased low flows during the latter part of each year that it has been in operation.

The most recently completed major reservoir in Indiana is the Monroe Reservoir, located on Salt Creek, which is a tributary of White River. Construction of this project began in 1960 and was completed in December 1964 at a cost of approximately 14 million dollars. Although the primary purpose of the reservoir is flood control, the State of Indiana, by contributing 54.1% of the total first cost, has acquired a very substantial storage for water supply purposes. Recreation will also be an important feature of the Monroe Reservoir since it provides a 10,750-acre lake at its normal pool elevation.

Three additional major reservoirs are under construction in the upper reaches of the Wabash River basin. Salamonie Reservoir, located on the Salamonie River upstream from Wabash, Indiana, was essentially complete at the end of 1965 and will come into full operation by the end of 1966. Mississinewa Reservoir, located on the Mississinewa River, near Peru, Indiana, is expected to be completed at the end of 1966 and be

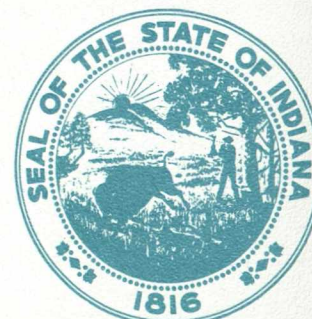
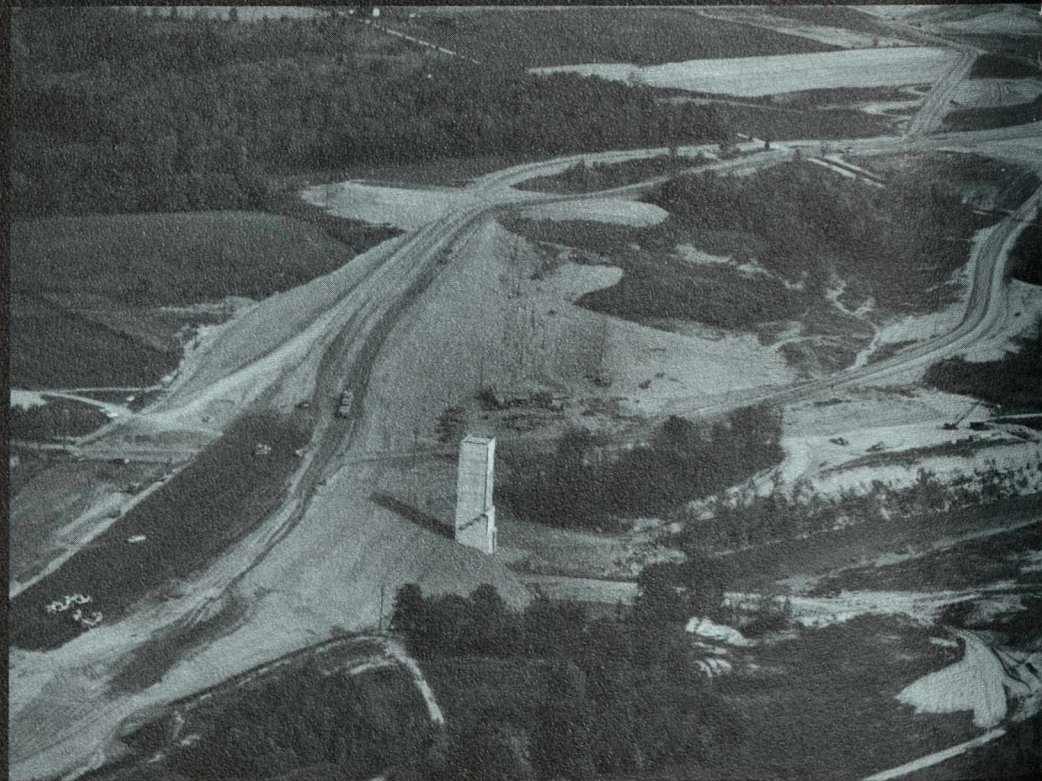
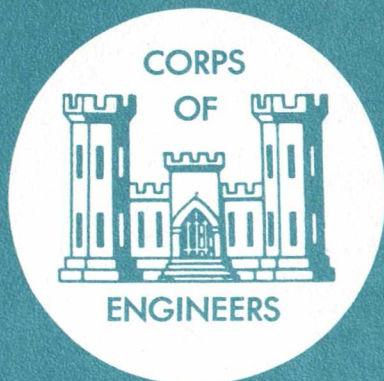
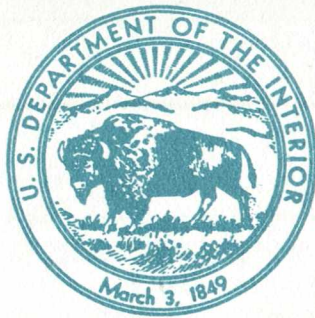
brought into operation early in 1967. Huntington Reservoir, located on the Wabash River itself above Huntington, Indiana, is planned for completion at the end of 1967 with its operation beginning early in 1968.

All three of the upper Wabash reservoirs will function primarily for flood control, but will also have as collateral purposes recreation and the enhancement of fish and wildlife. In addition, since the three reservoirs must be partly drawn down each fall in order to make additional storage space available for winter and spring rains, low flows on the Wabash River during that period of each year will be significantly improved.

During the course of the Wabash Basin Comprehensive Study, two Interim Reports covering major reservoir projects have been submitted to the Congress for consideration. These reports recommended construction of five additional reservoirs: Big Pine Reservoir located on Big Pine Creek above Williamsport, Indiana; Lafayette Reservoir located on Wildcat Creek above Lafayette, Indiana; Lincoln Reservoir, located on the Embarrass River near Charleston, Illinois; Patoka Reservoir, located on the Patoka River above Jasper, Indiana, and Clifty Creek Reservoir located on Clifty Creek upstream from Columbus, Indiana. All five of these projects were authorized by the Congress during the 1965 session and funds have been provided to initiate preconstruction planning on Lafayette, Lincoln and Patoka Reservoirs.

Average annual flood damages in the Wabash Basin based on present development and prices total \$35,000,000, of which \$20,000,000 is in downstream main stem areas and \$15,000,000 is in upstream areas. Natural average annual damages in the downstream areas without flood control works would be about \$33,000,000 and their reduction to \$20,000,000 has been achieved by the six reservoirs completed and under construction, and by major levee improvements along portions of the Wabash River and its tributaries as shown on page 13. If the Congress should provide the funds necessary to design and construct the five reservoirs described above, average annual damages in downstream main-stem areas would be reduced from \$20,000,000 to \$16,900,000. In addition, flows in the lower Wabash River, occurring in the fall of an extreme drought year, would be improved by more than 100% through normal operation of the 11 reservoirs.







CONDUCT OF THE STUDY

The Wabash River Basin Comprehensive Study is a specific program that does not replace or pre-empt any of the other water resources programs in the basin. An agency's independent program can currently be stimulated and strengthened through the Comprehensive Study.

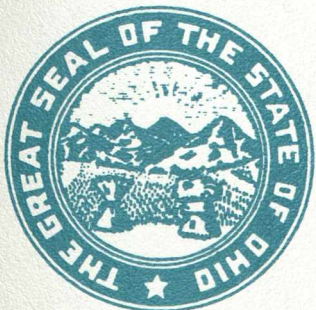
This does not happen casually, however. The Study is a very large technical undertaking with an estimated total Federal budget of more than four million. About half of this will be used by the Corps of Engineers. In some instances the money is appropriated directly to participating Federal agencies. In other cases the Plan of Survey directs the Corps of Engineers to transfer funds to participating agencies. This permits a number of Federal agencies to prepare extensive surveys and reports, and in some cases an acceleration of an agency's existing program in the Basin.

State agency contributions are not specifically written into the Study, but full use is being made of the local agencies' stores of basin data and their expert services. Further, the local groups can develop and bring forward studies establishing the basin's needs as they know them, and review the Study's progress from the local viewpoint.

Through highly functional Coordinating Committee meetings the program directors from the Federal departments and the states maintain policy liaison that in itself insures continual informal contact and teamwork in the field. Thus, the Study is kept balanced, practical, and mutually creative — progressing toward a master plan that is of value to all of the participants.

Both Congress and the states are concerned that the desires and contributions of the basin's people constantly play a part in the study process. Not only are public hearings held in connection with potential projects, but the public's viewpoint is always welcomed and sought by the working planners.

Federal interests might be viewed as progressing on three main "tracks" laid by Congress — one for the Army Corps of Engineers, one for the Department of Agriculture, and one for the Federal Water Pollution Control Administration. However, other agencies — especially certain bureaus of the Department of the Interior — are especially authorized to contribute certain types of specialized surveys within the Study.





THE DEPARTMENT OF AGRICULTURE

A relationship has long been recognized between the conservation practices on the farm and the problems of flooding and stream siltation that occurred off the farms. In 1935 Congress recognized the seriousness of these problems by the establishment of **THE SOIL CONSERVATION SERVICE** to provide technical assistance to the farmers in the planning and installation of conservation measures to reduce erosion and control water runoff. These measures included such things as proper crop rotations, terrace systems, contour tillage, diversions, channel and waterway improvements, farm ponds and other erosion and water control measures.

Later, under Congressional policy established by the Flood Control Act of 1936, the Soil Conservation Service was charged with the responsibility of waterflow retardation measures on upstream farm and range lands. But continuing experience brought out important differences in effectiveness between this work and the large reservoirs on the main tributaries provided by the Corps of Engineers. Therefore, the Watershed Protection and Flood Prevention Act of 1954, Public Law 566, was enacted, and it authorized the Soil Conservation Service to assist local people in planning and construction of flood prevention and watershed protection measures in watershed areas of up to 250,000 acres (390 square miles). These measures include channel improvements, levees and flood water retention structures up to 12,500 acre feet capacity and multiple purpose reservoirs up to 25,000 acre feet capacity. Current studies of the Department of Agriculture in the Wabash River Basin are

carried out under the authority of Section 6 of PL-566. Within the Wabash program more than 500 upstream watershed areas have been identified and are being investigated under the PL-566 program and the comprehensive basin study. The status of these studies is shown on the map on page 15.

A vital aspect of the master plan will be the formulation of a balanced and economically sound relationship between the small watershed works and the larger reservoirs downstream.

THE FOREST SERVICE of the Department of Agriculture is studying and evaluating the forest land areas for future forestry, recreational and wildlife programs, and water requirements for forest based industries. The Forest Service is also studying effects of specified projects on National Forest areas as well as State and privately owned forest lands.

THE ECONOMIC RESEARCH — also of the Department of Agriculture — is engaged in the assembly of agricultural data for the economic base survey. This includes evaluating the present and future cropping and land use patterns as well as drainage and irrigation potentials to be considered in future agricultural development.

The Study will thus be assisted by programs of the Departments of Agriculture and other Federal, State and local agencies within the Wabash Basin. Information developed during the study will be available to all agencies for their use in development of possible solutions to the many land and water problems of the basin.

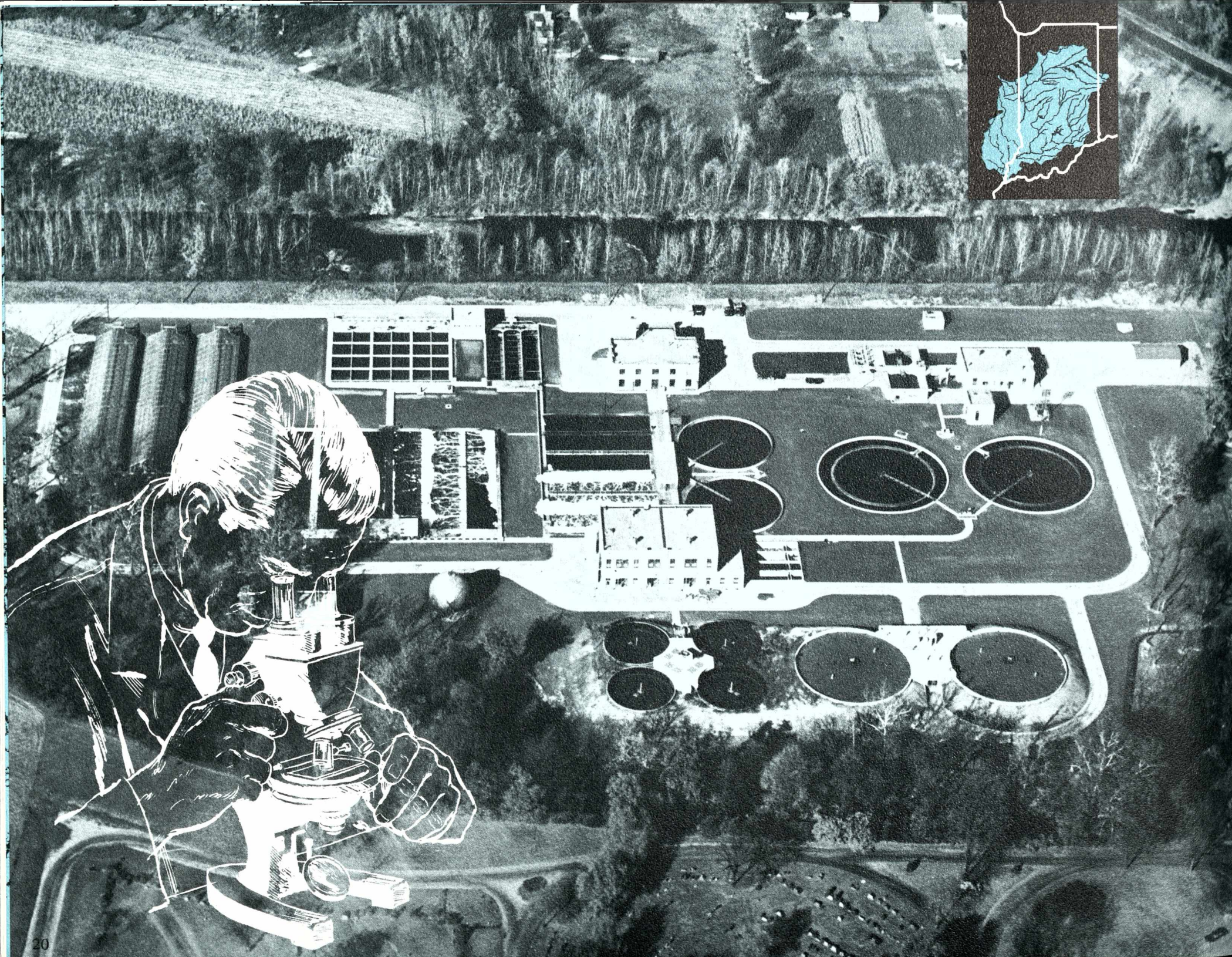
Typical agricultural water management reservoir for flood protection and irrigation.



A vegetated waterway helps control water runoff.



Irrigation potentials are being considered in future agricultural developments.



DEPARTMENT OF THE INTERIOR

Today, a primary problem in the basin is flood control; tomorrow it may be the quantity and quality of water supply. To many people, lack of a dependable supply of good water is already a significant problem in the basin. This concern is directly connected with our recent population, agricultural and industrial growth.

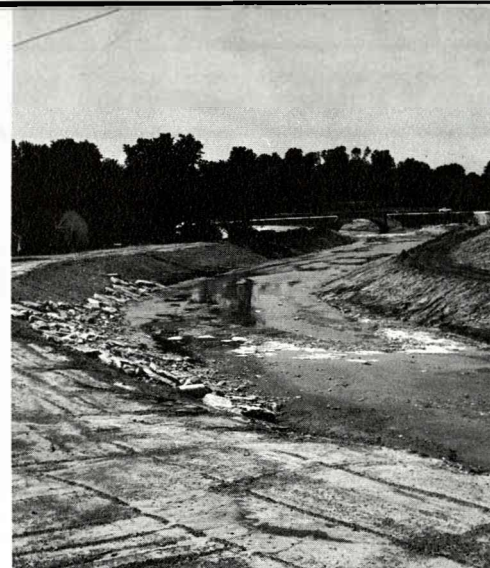
The Federal agency chiefly concerned with water supply and water pollution control is **THE FEDERAL WATER POLLUTION CONTROL ADMINISTRATION** which has recently been transferred to the U. S. Department of the Interior. Under terms of the Federal Water Pollution Control Act, the Administration provides technical and financial assistance designed to help protect America's water from pollution and prevent or solve water shortages. Like the Soil Conservation Service, the Federal Water Pollution Control Administration has its own substantial program in the Wabash Basin independent of the Comprehensive Study. Its detailed evaluation of the basin's water needs and their possible solution began in 1962 and will continue after the Study. Some of its analyses are involved and time consuming. It helps communities and industries work out specific solutions to complex cycles of supply, purification, use, and waste water treatment, and it administers construction grants to help put the solutions into effect.

Within the Comprehensive Study, the Federal Water Pollution Control Administration has the important job of analyzing urban water needs and stream flow requirements in sub-basins tributary to sites of Federal reservoirs. The Federal Water

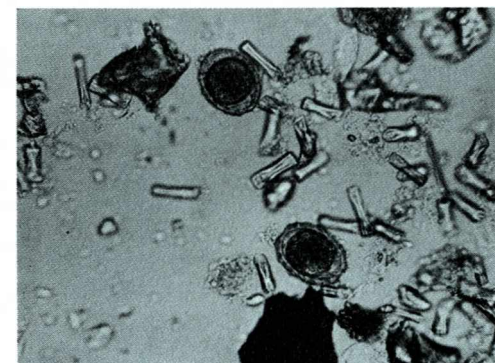
Pollution Control Administration provides a preliminary report in the project screening phase, then follows with a detailed and comprehensive report in connection with each site selected for detailed study. This detailed report helps determine how much reservoir capacity is needed to assure adequate minimum stream flow and if capacity should be allocated for municipal or industrial water supply.

Detailed reports by the Federal Water Pollution Control Administration must also project water needs into the future. In certain cases, however, this projection will be highly tentative at the time of a report, since it will depend on economic and population projections that are still being refined and that are seldom subject to exact computation. Less detailed analyses for communities not immediately related to Corps of Engineers and Department of Agriculture impoundment structures also are to be included in the Study.

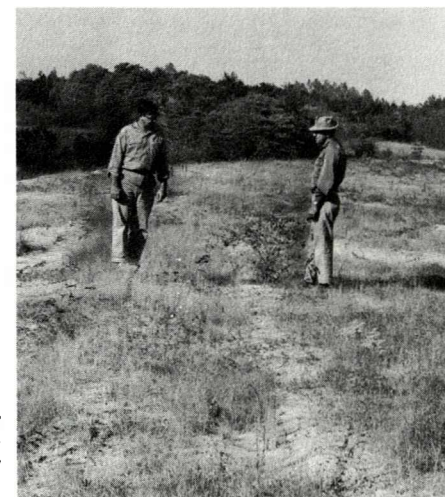
Payment of costs for storage for municipal and industrial water supply, and for irrigation, will be the responsibility of the non-Federal interests using the water, but such costs will be favorably affected if based on multipurpose reservoir development. Costs of storage to improve water quality are borne by the Federal Government if benefits are of widespread character. Under present policy, water quality storage can only be provided as an adjunct to a reservoir having a primary Federal interest, such as flood control; single purpose reservoirs for water quality or water supply storage cannot be constructed at Federal expense.



The need for additional flow to improve the aquatic environment in streams like this will be investigated.



Polluted and possibly pathogenic water viewed under a microscope.



A former haulage road built of waste has been covered and seeded to prevent acid mine drainage from entering the watercourse.



DEPARTMENT OF THE INTERIOR (continued)

Natural resources are either present or absent. They can be discovered, conserved, used, or misused; and that is about it. A natural resource is inherent in a new reservoir system — its beauty, recreational value, wildlife and sport potential can be enhanced and to some extent actually created. The Department of Interior, through its **BUREAU OF SPORT FISHERIES AND WILDLIFE** and **BUREAU OF OUTDOOR RECREATION** is aware of this resource potential and has the responsibility to develop it for the public good. Vital parts of the preliminary screening and later detailed study of potential reservoir sites are investigations by these two groups of specialists, working in liaison with conservation authorities of the individual states. At each reservoir site, not only the obvious benefits in new fish, waterfowl, boating and beauty are being defined, but also the losses in terms of features and gamelands that may be inundated are being determined. In certain cases, for example, "mitigation" land acquisitions are recommended — land that can be dedicated for replacement of game habitat inundated by the reservoir.

Comprehensive evaluations and plans are being prepared for recreational and wildlife preservation and development at each reservoir and for the basin as a whole. These are in terms of both the present and the long-term future.

Within the broad scope of the Department of the Interior are other agencies making different types of contributions, each essential to the Comprehensive Study and the master plan. **THE U. S. GEOLOGICAL SURVEY** maps and records of stream flow in the Wabash Basin, accumulated over the years as part of their continuing program, furnish essential data for engineering studies. This agency is also responsible for surveying and evaluating ground water resources.

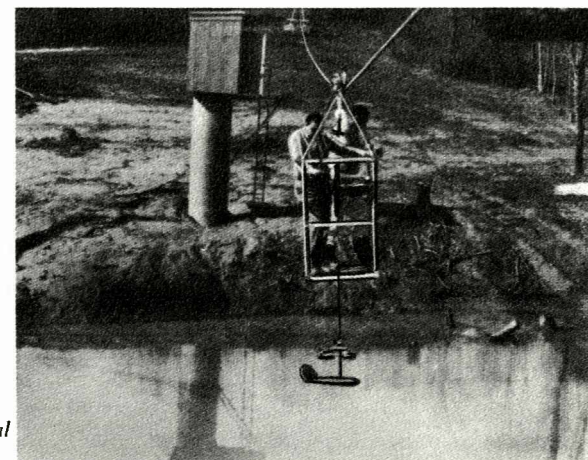
The Department of the Interior's **BUREAU OF MINES** checks potential reservoir sites for possible conflicts with mineral operations. As a contribution to the master plan, it is also preparing a report on present and projected production of the basin's important mining industry, and is working with the Federal Water Pollution Control Administration on the mining industries projected water needs, as well as problems of water quality.

The Department's **BUREAU OF COMMERCIAL FISHERIES** is studying the possibilities of reviving the commercial fishing industry that once thrived in the basin; **THE SOUTHEASTERN POWER ADMINISTRATION** will be reporting on the marketability of any new hydro-electric power developed in the basin; and **THE NATIONAL PARK SERVICE** will be guarding the scientific, historical and archeological values of the basin.

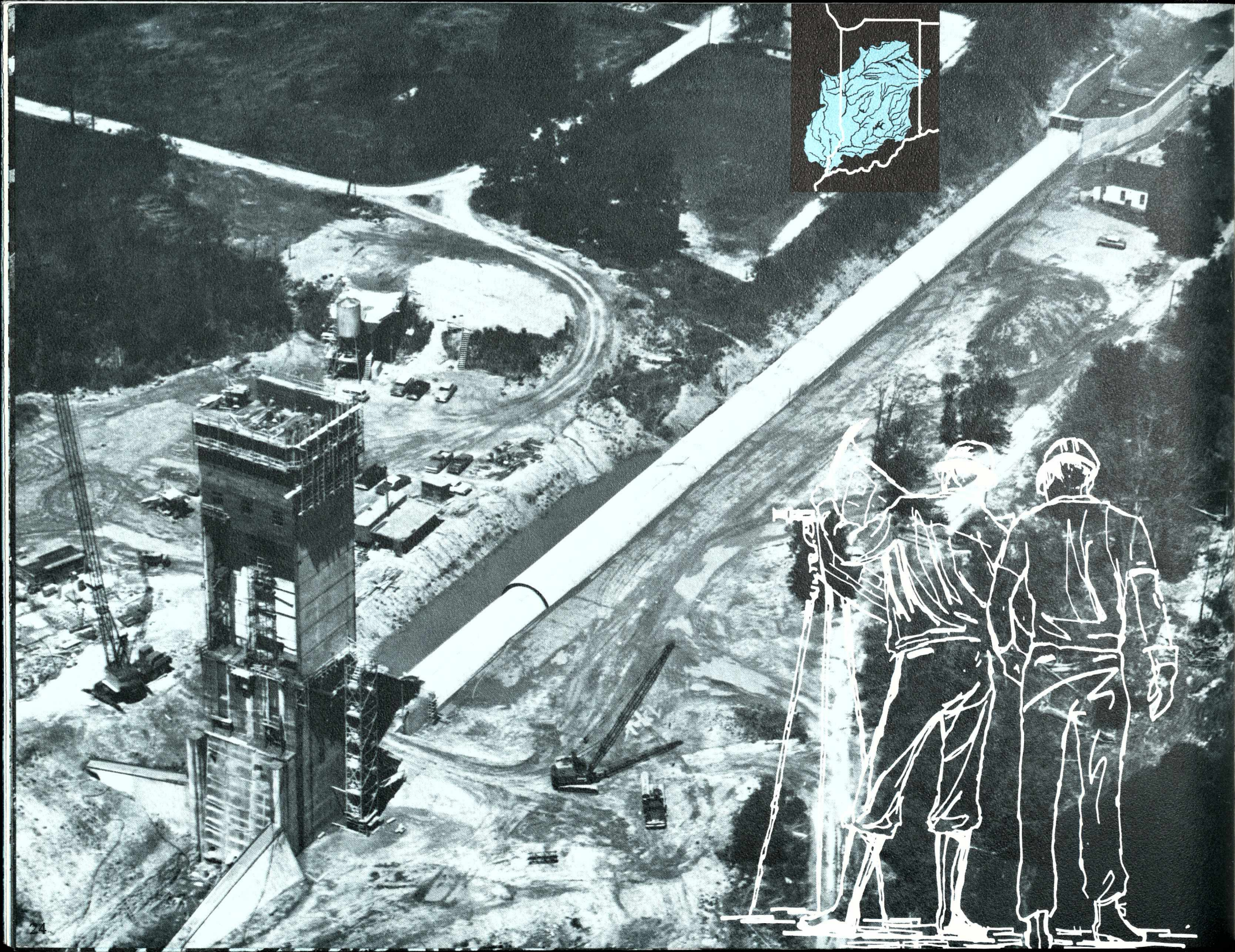
Easy access makes boating more pleasurable.



Large bodies of water will encourage wildlife.



Stream flow is recorded by U. S. Geological Survey.



THE CORPS OF ENGINEERS

The services of the Corps of Engineers to the Nation began with the Revolutionary War and have been both military and non-military. The Corps record includes construction of the Panama Canal, the development of the first atomic bomb (the Manhattan District), construction of military bases both here and abroad, and prosecution of a major water resource development program. This latter program now constitutes a major portion of the Federal Government's effort toward use and control of the Nation's water resources with regard to navigation, water supply, floods, hydroelectric power, water quality, recreation, fish and wildlife preservation, hurricane protection, beach erosion, and other purposes as authorized by law.

The first Federal civil works project accomplished by the Corps was assigned in 1824 when Congress authorized the improvement of the Ohio and Mississippi Rivers by the removal of snags and other obstructions to navigation. Since then the Corps has built and maintained most of the Nation's harbors and navigable waterways. In 1936, when the Federal Government assumed responsibility for flood control, the Corps was assigned major responsibility for carrying out that task. The Corps' program consists of over 3,600 authorized projects having a Federal cost of over \$22 billion. Projects costing over \$6 billion have been completed, and over \$6 billion has been invested in projects under construction. Uncompleted portions of work under construction, and authorized projects not started total about \$10 billion. Corps of Engineers' projects within the Wabash River Basin are shown on the status map on page 13.

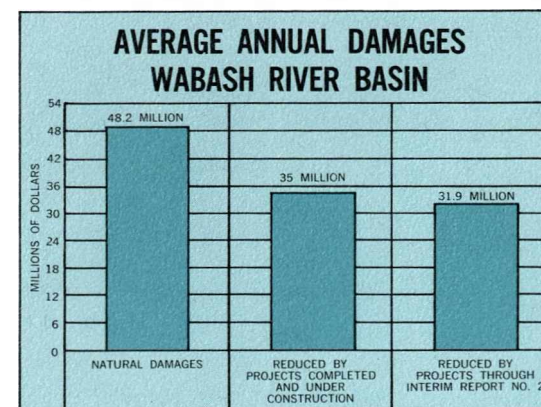
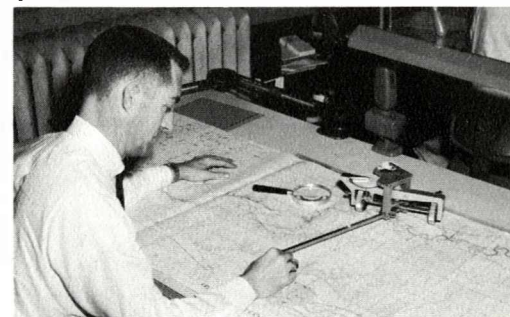
Until the 1930's, the Corps was called upon to develop plans for individual projects to serve specific purposes. In succeeding years, however, the Federal Government has progressively assumed wider responsibilities and the scope of Corps planning has broadened into the current comprehensive concept being applied in the Wabash River Basin Comprehensive Study.

The Wabash Comprehensive Study is being administered by the Louisville District of the Corps of Engineers. The District's role runs the gamut from coordination of the efforts of the cooperating agencies to project construction. It includes such things as identification of development needs based on its own studies of flood control and navigation and assessment of other needs by cooperating agencies; identification and evaluation of reservoir sites, local flood protection projects and other structural features; hydrologic and hydraulic studies; geologic investigations; design and cost studies; holding of public hearings; preparation of reports to the Congress; and conduct of an economic base survey for the Basin which will forecast to year 2020 the economic development factors relating to water resources development in the Basin. Of major importance to the Comprehensive Study is the Corps' over-all responsibility for fitting together all of the study findings into a comprehensive basin plan which will balance the desires of all concerned with costs involved to secure the maximum national return on the investment involved.

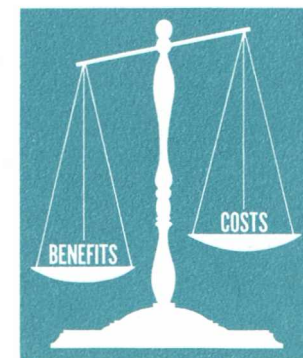


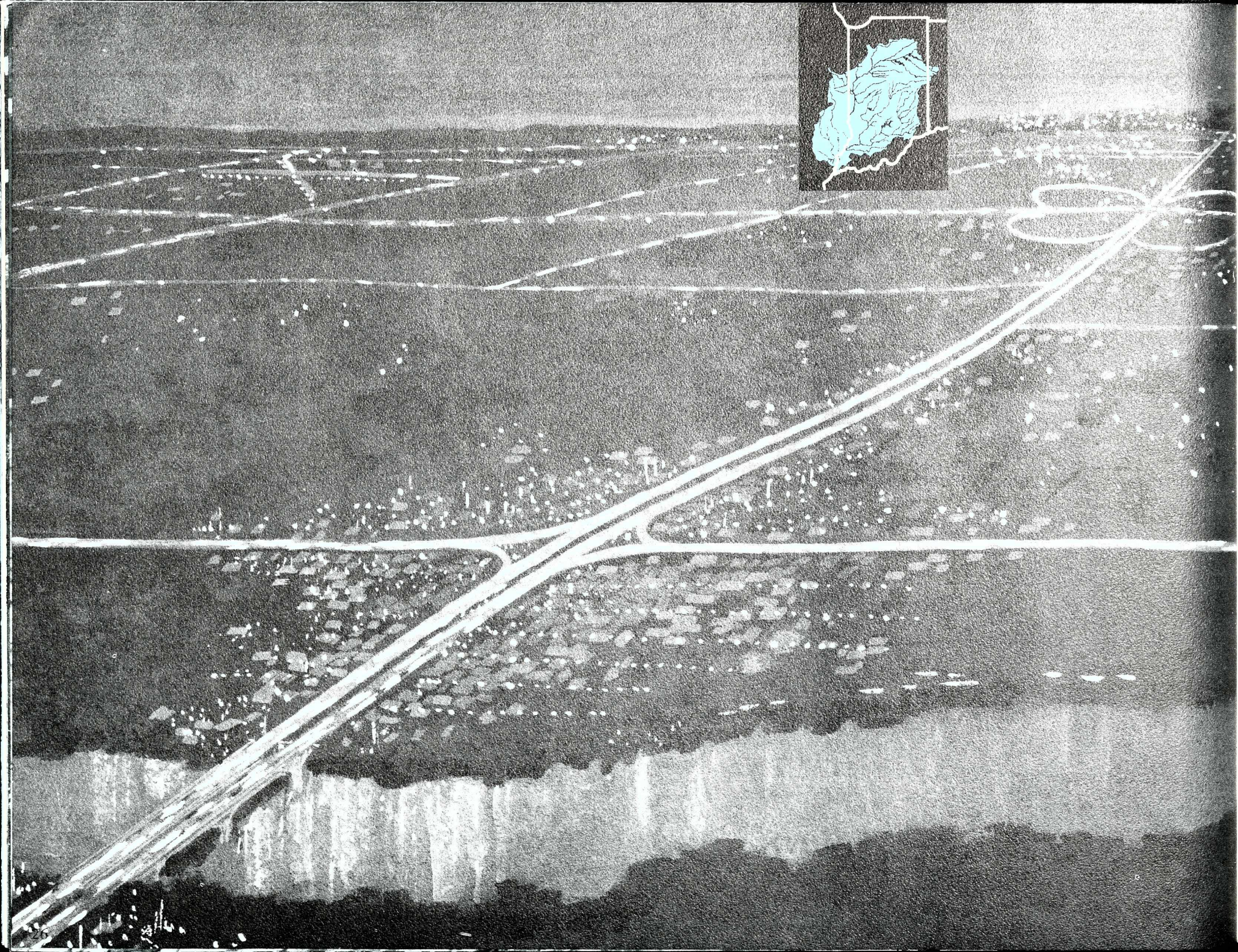
A Corps of Engineers crew making soil boring to determine the physical characteristics of the soil.

A Corps' engineer computing the capacity of a potential reservoir site.



Mansfield Dam and Reservoir, Ind.





OTHER FEDERAL AGENCIES

Since water is a key resource, the Study and the ensuing master plan will vitalize many phases of the life and economy of the basin. Merely to mention the other cooperating Federal agencies may suggest the scope of benefits and opportunities for participation ahead for residents of the basin.

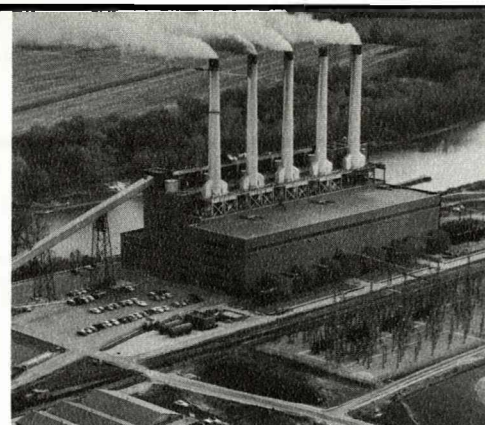
THE DEPARTMENT OF COMMERCE will be involved through six different agencies. Its **OFFICE OF BUSINESS ECONOMICS**, **CENSUS BUREAU**, **OFFICE OF THE UNDER SECRETARY FOR TRANSPORTATION**, **COAST AND GEODETIC SURVEY**, and **WEATHER BUREAU** all will be called on to furnish information, which in itself represents decades of invaluable study and service through many continuing programs in the basin.

THE BUREAU OF PUBLIC ROADS, also a Department of Commerce agency, will be in extensive cooperation with the reservoir construction agencies — for the proposed reservoir system will change both the physical face and the economic character of the land through which the Bureau's System of Interstate Highways and other U. S. Highways are developing.

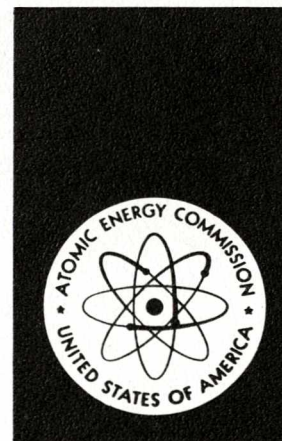
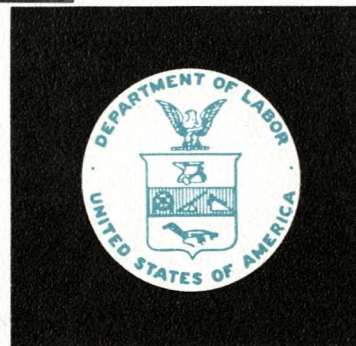
THE DEPARTMENT OF LABOR will furnish essential data for an economic base survey.

Although extensive hydro-electric power development is not expected in the Wabash Basin's Comprehensive Development Plan, **THE FEDERAL POWER COMMISSION** is considering each potential reservoir site carefully and reporting on the possibilities that do exist. In the future power will become more and more important to the basin's progress. The Commission is preparing a projection of power needs and the fuel-generated power developments of the foreseeable future — a significant water using industry.

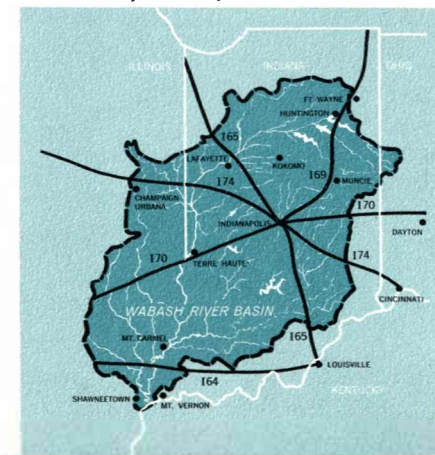
THE ATOMIC ENERGY COMMISSION is cooperating with the Federal Power Commission and also furnishing data directly for the Economic Survey. Although no atomic energy development has been projected for the near future, the eventual possibilities are favorable for power generation and are not being overlooked in the Study.



One of the power generating plants on the main stem of the Wabash River. The water demands of these and future plants are being considered in the comprehensive study.



Coordination of highway and water resources planning is essential to economical development of both resources.





Despite all that the Federal Government can provide, offer, and regulate in the basin, the Wabash and its tributaries remain a kind of political orphan. Many of its streams, and even the opposite banks of the lower reaches, are shared by the people, industries, and communities of two sovereign states. Therefore, to provide for full interstate cooperation in the development of the basin's water resources, the Wabash Valley Compact was adopted in 1960 after approval by the legislatures of both Illinois and Indiana and by the Congress of the United States. The Compact established the Wabash Valley Interstate Commission, which is empowered to promote the balanced development of the entire basin and recommend integrated plans and programs.

The Commission's field of action is broad: it can inform the public, encourage coordinated action of agencies, make studies, and recommend legislation. Now cooperating in the Wabash River Basin Comprehensive Study to the limit of its modest budget, the Wabash Valley Commission could eventually be the instrument through which the two states act as one in the development of the basin.



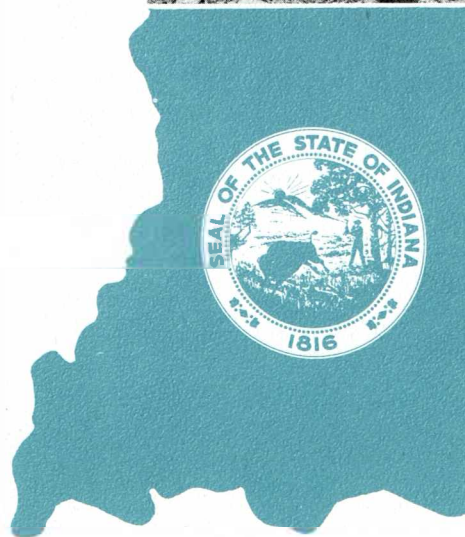
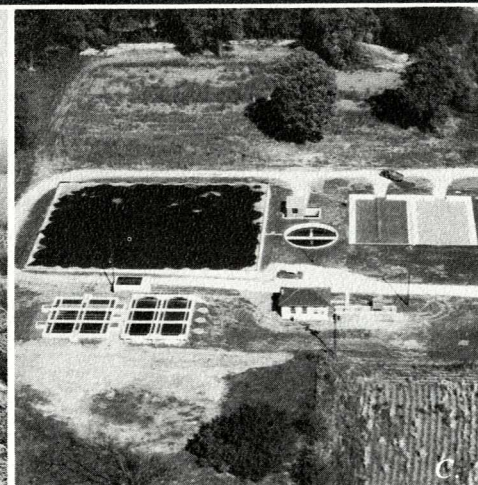
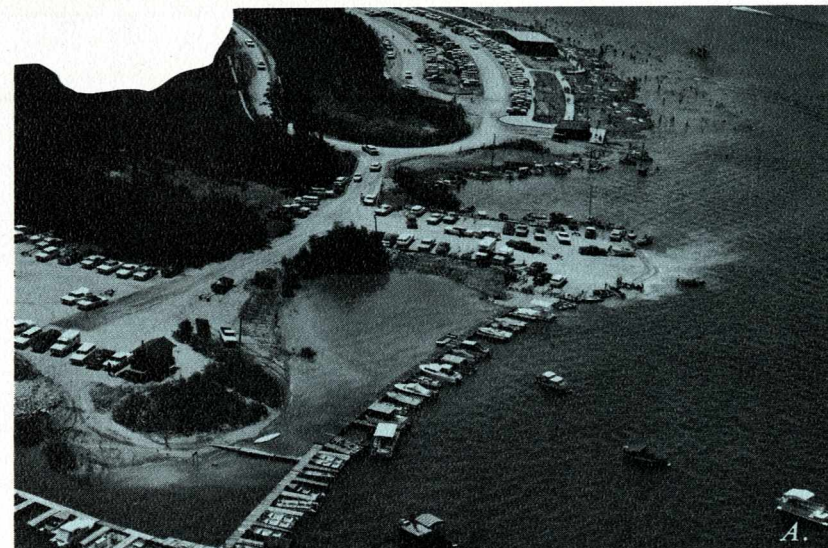
STATE OF INDIANA

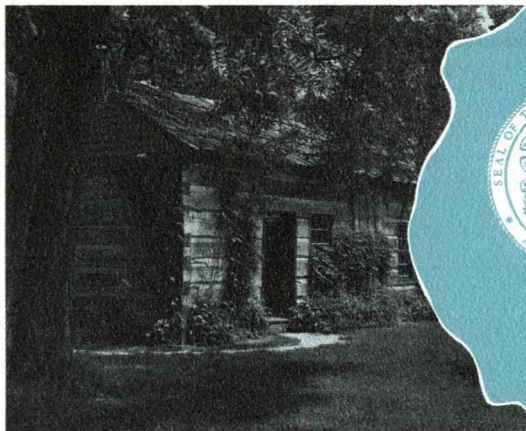
Over two-thirds of the State of Indiana is in the Wabash Basin; almost three-fourths of the Wabash Basin is in Indiana. These two facts point to the great interest Indiana has in the Comprehensive Study.

In 1951 the Indiana Flood Control and Water Resources Commission completed a comprehensive survey of the State's water assets and problems. The report has proved important as the foundation of a dynamic state water resources program and a steppingstone toward the Wabash Basin Comprehensive Study. Currently all water-land functions of the State are being integrated under the central administration of a Department of Natural Resources. Within this unified department all matters of parks, forestry, wildlife, recreation and entomology are handled by one sub-authority, and all matters of flood control, water resources, geological survey, oil and gas, and soil-and-water conservation are the responsibility of another.

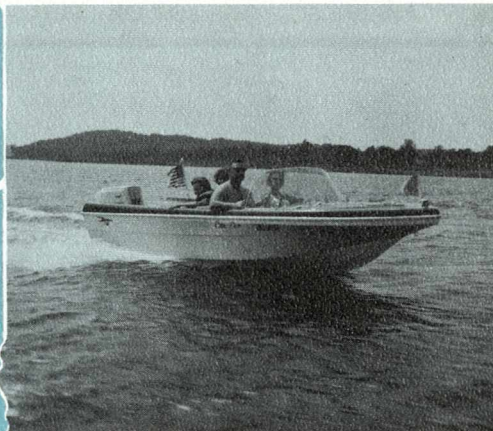
There is strong expectation that the Study, the development of a network of Federal multipurpose reservoirs and upstream watershed programs, and Indiana's more intensively coordinated State program, can solve the State's remaining major water resources needs. As of this writing Interim Reports of the Comprehensive Study have secured Congressional authorization for construction of four reservoir projects in Indiana as shown on the map on page 13.

- A. *Indiana has actively participated in the recreational development of Federal reservoirs.*
- B. *Indiana has long been interested in conservation as indicated by this 40-year old picture of a reforestation project.*
- C. *Indiana is actively pursuing its responsibilities for stream pollution control.*
- D. *State of Indiana flood information center in operation.*





Lincoln Log Cabin State Park near the proposed Lincoln Reservoir, Illinois.



Boating, a reservoir recreational opportunity.

STATE OF ILLINOIS

The main stem of the Wabash borders Illinois for about 200 miles; and over 8,500 square miles of important Illinois territory is drained by the Vermillion, Embarrass, Little Wabash, and Skillet Fork rivers — all important tributaries of the Wabash. Furthermore, the State has a number of popular parks in the area; and the Study is leading toward recommendations for construction of several major reservoirs within the State. Lincoln Reservoir on the Embarrass, one of the largest proposed for the basin, has already been authorized by the Flood Control Act of 1965. Over a dozen local protection structures have been authorized previously, offering hope of vital flood relief to towns and agricultural sections that have long been among the hardest-hit in the basin.

Thus, for good reasons, Illinois has actively sought the Study and is contributing to its progress — through effective representation on the Coordinating Committee, through participation in the Wabash Valley Interstate Commission, and through the data and services of its water-land agencies.

Illinois' Department of Business and Economic

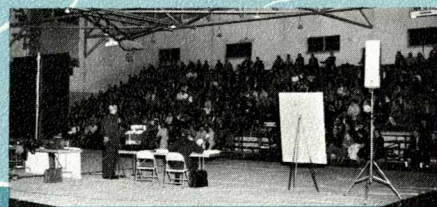
Development is conducting a state-wide planning program that includes a \$575,000 study of the State's water resources. Within this program the Division of Waterways, Department of Public Works and Buildings, has already surveyed some of the Wabash Basin Streams and reservoir sites. The results are directly useful in the Study. Other state agencies are considering recreation development, fish and wildlife conservation, mineral development, and other aspects of the Study. The Department of Business and Economic Development coordinates the State's participation in Federal programs and endeavors to make State and Federal surveys complementary.

An important inter-state lay group, the Wabash Valley Association, headquartered in Illinois, lists thousands of active members in both Illinois and Indiana. This widely-based group has helped focus the feelings of ordinary people towards bringing about the Study and helps maintain communications both by informing the public of water-land resource facts and by helping to keep the public's viewpoint constantly before the authorities.

STATE OF OHIO

The Wabash River originates in Ohio, partly as the western outlet of Grand Lake, a very old artificial lake situated on a land divide that drains both to the east and to the west. Since less than one-half percent of the basin is in Ohio, the State will be directly affected by the Study to only a small degree. However, the State is dealing with many water problems of its own in other areas, and features importantly in the Ohio River Basin Comprehensive Survey. Ohio does, therefore, participate in the Wabash Study as an experienced consultant as well as an interested party.

ONE MORE IMPORTANT PLANNER—YOU



Clearly the Federal and State governments have begun to bring about changes in the Wabash basin. Already there are great reservoirs where just a few years ago there were none. Already many people are learning first-hand the wide range of benefits and opportunities that accompany these and other water resource developments. Individuals, industries, and communities are responding on a local level to the countless potentials for progress. Such participation and interest must continue. For example, state parks and facilities can help draw many tourists to the Federal reservoirs, but it takes strong, thoughtfully *planned local action* to realize the important economic and civic benefits that can follow.

Another vital area of local planning is flood plain land use. A system of reservoirs and local protection works will not eliminate the need for control over development and use of lands still subject to inundation.

The Department of Agriculture's soil conservation and flood control program requires local initiative and participation, as does the local flood protection projects provided by the Corps of Engineers.

In general, projects must include flood control, irrigation or navigation as a primary purpose to secure Congressional authorization for Federal construction. However, the potential usually exists for local interests to arrange for addition of water supply storage or to influence other features of a reservoir.

Your local area's best asset will continue to lie in the responsibility, open-mindedness, and creative energy of you and your neighbors. Faced with drought, Southern Indiana has come up with more farm ponds than any other comparable area of the country. Successful rural water companies have appeared, one in Illinois, with a rural main over a hundred miles long. This same vital quality of response to the *positive* facts and ideas of the Study can be worth more in the long run than the earth and concrete of dams.

For further information about the Study please address your inquiries to any of the following Federal, State, and Interstate offices cooperating in the Wabash River Basin Comprehensive Study.

District Engineer
U. S. Army Engineer District, Louisville
Corps of Engineers
P. O. Box 59
Louisville, Kentucky 40201

State Conservationist
U. S. Department of Agriculture
Soil Conservation Service
311 W. Washington Street
Indianapolis, Indiana 46204

Regional Coordinator
Ohio-Appalachian Area
U. S. Department of the Interior
Federal Office Building
550 Main Street
Cincinnati, Ohio 45202

Regional Planning Engineer
Bureau of Public Roads
U. S. Department of Commerce
18209 Dixie Highway
Homewood, Illinois 60430

Chicago Regional Office
Federal Power Commission
U. S. Customhouse
610 S. Canal Street
Chicago, Illinois 60607

Executive Director
Illinois Dept. of Business and
Economic Development
State Office Building
Springfield, Illinois 62706

Director
Indiana Department of Natural Resources
100 N. Senate Avenue
Indianapolis, Indiana 46204

Director
Ohio Department of Natural Resources
1106 Ohio Departments Building
Columbus, Ohio 43215

Executive Director
Wabash Valley Interstate Commission
414 REA Building
8th and Wabash
Terre Haute, Indiana 47801



BASIC REFERENCES: The Federal Government's water resources responsibilities started with navigation. As early as 1824 the Ohio and Mississippi Rivers were being improved for navigation. The first broad Federal approach to flood control came in 1927, when the Corps of Engineers was authorized to survey the rivers of the nation. One of the resulting "308 reports" was made on the Wabash River in 1932 and provided a stepping stone to present water resources efforts in the basin. However, it was the Flood Control Act of 1936 that set forth the first national policy on flood control. Highly restrictive at first, the policy was broadened to the present scope through subsequent Congress-

sional action. The Flood Control Act of 1938 added electric power generating facilities to the authorized purposes of Federal reservoir projects. The 1944 Act authorizes disposal of "surplus" water for domestic and industrial use and the 1958 Act provided a more clear-cut authority to add capacity for storage of water supply at local expense in Federal reservoirs. In the 1958 Act, it was declared the policy of Congress to recognize the primary responsibility of the States and local interests for development of water supplies for municipal and industrial use, and the Federal Government should participate and co-operate with non-Federal interests in developing such water supplies. From a practical standpoint

this legislation also applies generally to provisions for irrigation water supply, as the Reclamation Act is specifically limited to the 17 western states. The 1944 Act also made it possible for the Federal Government to improve major channels to provide better exit for local drainage systems, and authorized the use of Federal Reservoirs for public recreation. The inclusion in Federal projects of measures to prevent damage to fish and wildlife resources was authorized in 1946, and in 1958 this legislation was broadened so that provisions could be made for enhancement of that resource. In 1961 the Congress authorized the inclusion in Federal reservoirs of additional capacity to provide water to be re-

leased for "quality control." The Federal Water Project Recreation Act of 1965 provides for cost sharing between Federal and local interests for recreation and fish and wildlife development and local management of these features of Federal water projects. In addition to non-Federal costs associated with provisions for water supply and recreation at reservoirs as discussed above, non-Federal costs are also associated with local flood protection projects and small watershed developments under PL-566. These include rights-of-way expense, operation and maintenance, and other costs as indicated by terms of project authorizations.